

HANDBOOK OF OPERATING INSTRUCTIONS

FOR

Navy Models

ATJ — ATK

Aircraft Radio Transmitter Equipments

and

ARJ — ARK

Aircraft Radio Receiver Equipments

●

NOTICE: This document contains information affecting the national defense of the United States within the meaning of the Espionage Act, 50 U.S.C., 31 and 32, as amended. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law. (AR 380-5) (ARTS 75 ½ and 76, U.S.N. REGS-1920).

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Published under authority
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the United States of America.

FAILURE REPORT

"Report of failure of any part of this equipment during its guaranteed life shall be made on Form N. Aer. 4112 'Report of Unsatisfactory or Defective Material' or a report in similar form and forwarded in accordance with the latest instruction of the Bureau of Aeronautics. In addition to other distribution required, one copy shall be furnished to the Inspector of Naval Material (location to be specified) and the Bureau of Ships. Such reports of failure shall include:

1. Reporting activity.
2. Nameplate data.
3. Date placed in service.
4. Part which failed.
5. Nature and cause of failure.
6. Replacement needed (yes-no).
7. Remedy used or proposed to prevent recurrence.

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DESTRUCTION OF ABANDONED MATERIAL IN THE COMBAT ZONE

In case it should become necessary to prevent the capture of this equipment and when ordered to do so, DESTROY IT SO THAT NO PART OF IT CAN BE SALVAGED, RECOGNIZED OR USED BY THE ENEMY. BURN ALL PAPERS AND BOOKS.

Means:

1. Explosives, when provided.
2. Hammers, axes, sledges or whatever heavy object is readily available.
3. Burning by means of incendiaries such as gasoline, oil, paper or wood.
4. Grenades and shots from available arms.
5. Where possible, and when time permits, bury all debris or dispose of it in streams or other bodies of water.

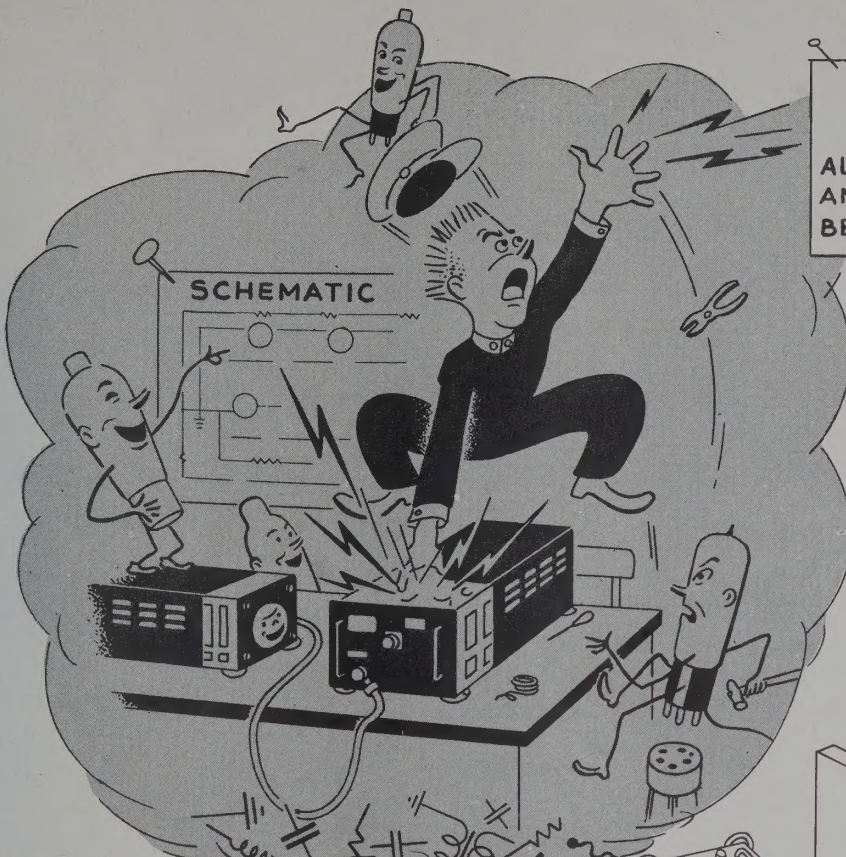
Procedure:

1. Obliterate all identifying marks. Destroy nameplates and circuit labels.
2. Demolish all panels, castings, switch and instrument boards.
3. Destroy all controls, switches, relays, connections and meters.
4. Rip out all wiring in electrical equipment. Smash gas, oil and water cooling systems in gas-engine generators, etc.
5. Smash every electrical or mechanical part whether rotating, moving or fixed.
6. Break up all operating instruments such as keys, phones, microphones, etc.
7. Destroy all classes of carrying cases, straps, containers, etc.

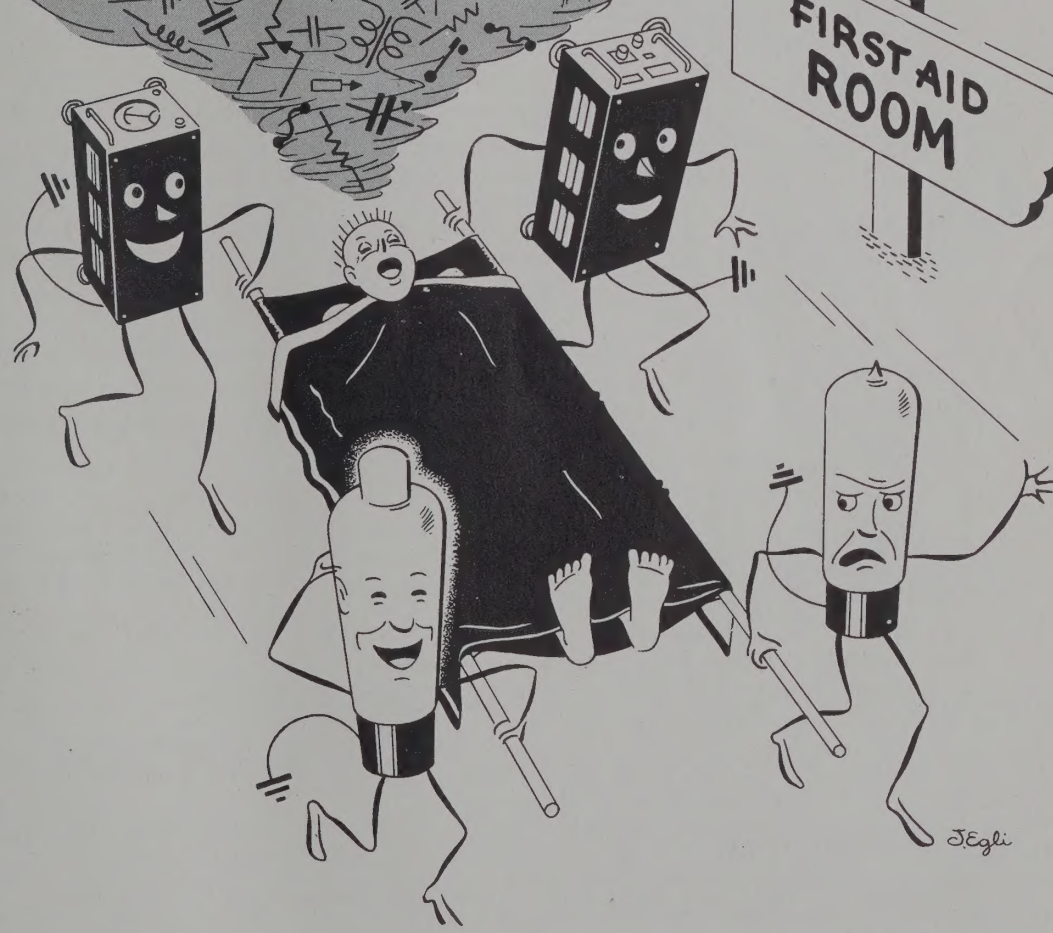
WARNING

OPERATION OF THIS EQUIPMENT INVOLVES THE USE OF HIGH VOLTAGES WHICH ARE DANGEROUS TO LIFE. OPERATING PERSONNEL MUST AT ALL TIMES OBSERVE ALL SAFETY REGULATIONS. DO NOT CHANGE TUBES OR MAKE ADJUSTMENTS INSIDE THE EQUIPMENT WITH HIGH VOLTAGE SUPPLY ON. THIS EQUIPMENT DOES NOT HAVE INTERLOCKS FOR PROTECTION, THEREFORE ALWAYS SHUT DOWN MOTOR GENERATORS OR OTHER POWER EQUIPMENT. UNDER CERTAIN CONDITIONS DANGEROUS POTENTIALS MAY EXIST IN CIRCUITS WITH POWER CONTROLS IN THE OFF-POSITION DUE TO CHARGES RETAINED BY CAPACITORS, ETC. TO AVOID CASUALTIES ALWAYS DISCHARGE AND GROUND CIRCUITS PRIOR TO TOUCHING THEM.

**DANGER
HIGH VOLTAGE**
ALWAYS SHUT OFF POWER
AND GROUND THE CIRCUITS
BEFORE TOUCHING



**FIRST AID
ROOM**



J. Egli

ELECTRIC SHOCK
FIRST-AID TREATMENT**SAFETY FIRST**

Regard electrical apparatus generally, and especially all current-carrying parts, as dangerous, irrespective of voltage. Exercise great care in handling, and avoid broad contacts such as are made by standing on a metal deck or in water.

Dangerous contact may result through lessened resistance when the skin and clothing are wet with perspiration. Contact with damp metal surfaces—decks, bulkheads, guns, machinery—may allow the current to ground through the moist skin and body.

Electric shock is due to current passing through the body—current actually passing—irrespective of the voltage. A pressure as low as 110 volts has caused death. Current passing through the body in the region of the heart is especially dangerous. In using electric breast drills avoid the possibility of a ground.

Usually electric shock does not kill instantly. Life can often be saved even though breathing has stopped.

I. FREE THE VICTIM FROM THE CIRCUIT IMMEDIATELY.

Use a dry nonconductor (rubber gloves, clothing, rope, board) to move either the victim or the wire. Beware of using metal or moist material.

Shut off the current.

If necessary to cut a live wire, use an ax or hatchet with a dry wooden handle; turn your face away from the electrical flash.

II. ATTEND INSTANTLY TO THE VICTIM'S BREATHING.

Begin resuscitation at once on the spot. Do not stop to loosen clothing; every moment counts.

RESUSCITATION BY THE PRONE PRESSURE METHOD OF ARTIFICIAL RESPIRATION**GAS ASPHYXIATION****ELECTRIC SHOCK****DROWNING**

Waste no time. When the patient is removed from the water, gas, smoke, or electric contact, get to work at once with your own hands. Send for the medical officer or nearest physician.

No reliance should be placed upon any special mechanical apparatus, as it is frequently out of order and often is not available when most needed. The patient's mouth should be cleared of any obstruction such as chewing gum or tobacco, false teeth, or mucus, so that there is no interference with the entrance and escape of air.

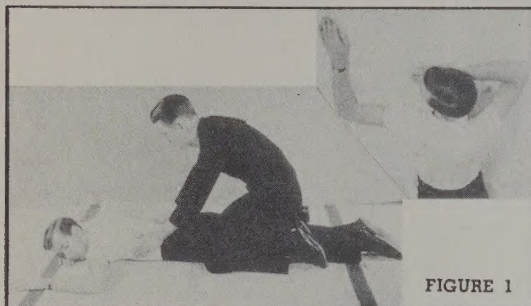


FIGURE 1

POSITION

1. Lay the patient on his belly, one arm extended directly overhead, the other arm bent at elbow and with the face turned outward and resting on hand or forearm, so that the nose and mouth are free for breathing. (See Inset, fig. 1.)

2. Kneel straddling the patient's thighs with your knees placed at such a distance from the hip bones as will allow you to assume the position shown in Figure 1.

Place the palms of the hands on the small of the back with fingers resting on the ribs, the little finger just touching the lowest rib, with the thumb and fingers in a natural position, and the tips of the fingers just out of sight. (See fig. 1.)

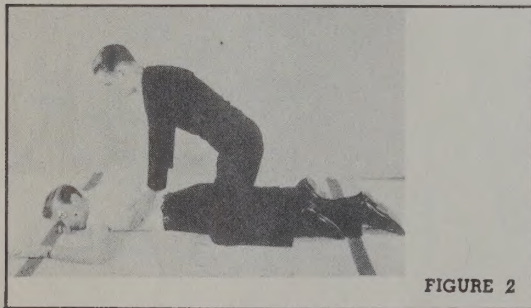


FIGURE 2

FIRST MOVEMENT

3. With arms held straight, swing forward slowly, so that the weight of your body is gradually brought to bear upon the patient. The shoulder should be directly over the heel of the hand at the end of the forward swing. (See fig. 2.) Do not bend your elbows. This operation should take about two seconds.



FIGURE 3

SECOND MOVEMENT

4. Now immediately swing backward, so as to remove the pressure completely. (See fig. 3.)

5. After two seconds, swing forward again. Thus repeat deliberately twelve to fifteen times a minute the double movement of compression and release, a complete respiration in four or five seconds.

6. Continue artificial respiration without interruption until natural breathing is restored. Do not get discouraged at the slow results that sometimes happen when resuscitating the apparently drowned. Efforts often have to be continued a long time before signs of life are apparent. Do not discontinue the efforts until certain that all chance is lost. Sometimes, even after several hours' work, recovery takes place.

7. As soon as this artificial respiration has been started and while it is being continued, an assistant should loosen any tight clothing about the patient's neck, chest, or waist. TO KEEP THE PATIENT WARM DURING ARTIFICIAL RESPIRATION IS MOST IMPORTANT AND IT MAY BE NECESSARY TO COVER HIM WITH BLANKETS AND WORK THROUGH THEM, AS WELL AS TO APPLY HOT-WATER BOTTLES, HOT BRICKS, ETC. Do not give any liquids whatever by mouth until the patient is fully conscious.

8. To avoid strain on the heart when the patient revives, he should be kept lying down and not allowed to stand or sit up. If the doctor has not arrived by the time the patient has revived, he should be given some stimulant, such as one teaspoonful of aromatic spirits of ammonia in a small glass of water or a hot drink of coffee or tea, etc. Continue to keep the patient warm and at rest.

9. Resuscitation should be carried on at the nearest possible point to where the patient received his injuries. As a general rule he should not be moved from this point until he is breathing normally of his own volition and then moved only in a lying position. Should it be necessary, due to extreme weather conditions, etc., to move the patient before he is breathing normally, resuscitation should be carried on during the time that he is being moved.

10. A brief return of natural respiration is not a certain indication for stopping the resuscitation. Not infrequently the patient, after a temporary recovery of respiration, stops breathing again. The patient must be watched and if natural breathing stops, artificial respiration should be resumed at once.

11. In carrying out resuscitation it may be necessary to change the operator. This change must be made without losing the rhythm of respiration. The relief operator should kneel behind the one giving the artificial respiration and at the end of the movement, the operator crawls forward while the relief takes his place. By this procedure no confusion results at the time of change of operator, and a regular rhythm is kept up.

PRACTICE IN THE PERFORMANCE OF ARTIFICIAL RESPIRATION ON A VOLUNTEER SUBJECT SHOULD BE OBTAINED BY EVERYONE.

FIRST AID

CUTS, WOUNDS AND SEVERE BLEEDING

SMALL CUTS AND SCRATCHES

Any break in the skin is dangerous. Small cuts and scratches should be painted with **TINCTURE OF IODINE**.

DEEP CUTS AND WOUNDS

KEEP CLEAN. DO NOT use Tincture of Iodine. DO NOT probe into a deep cut or wound. Antiseptics for deep cuts and wounds are: Violet Gentian, Potassium Permanganate solution, Tincture of Merthiolate, or Baking Soda and water. If antiseptics are not available, ordinary soap and water should be used, washing **AROUND** and **AWAY** from the wound. Cover the wound with a sterile gauze dressing and hold in place with adhesive tape or strip of gauze.

SEVERE BLEEDING

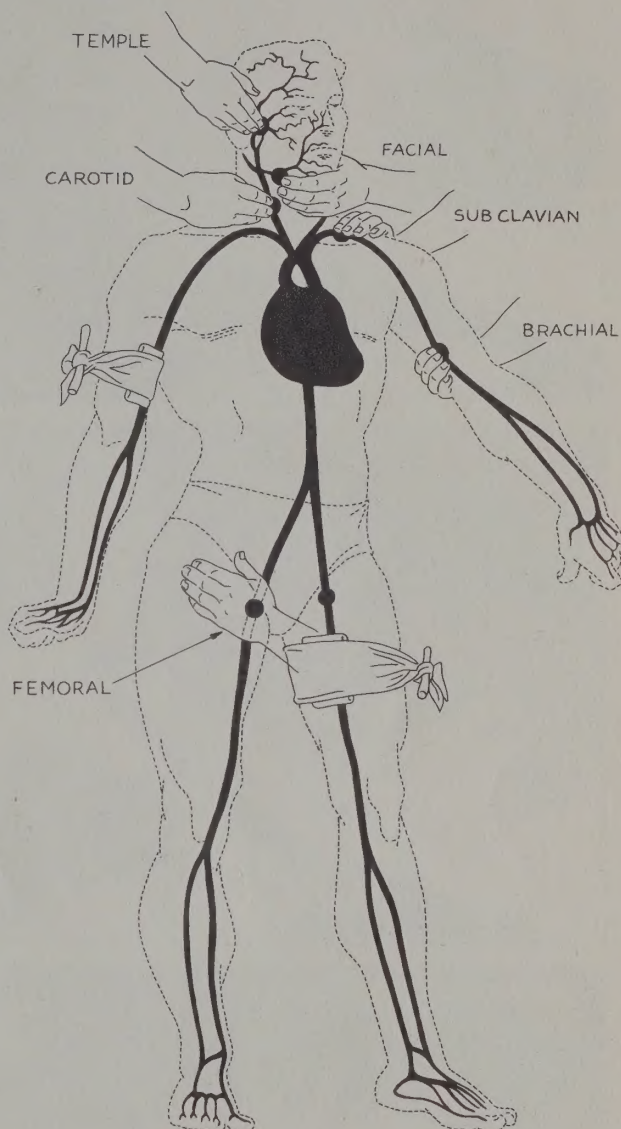
VENOUS BLEEDING.—When a vein has been cut, the blood is **DARK RED** and flows steadily. Pressure, if required, should be applied **BELOW** the wound, or **AWAY** from the heart, to stop bleeding. Then care for wound as described under “**DEEP CUTS AND WOUNDS.**”

ARTERIAL BLEEDING.—When an artery has been cut, the blood is **BRIGHT RED** and flows in **SPURTS**. Pressure should be applied **ABOVE** the wound, or **BETWEEN** the wound and the heart, to stop bleeding. Pressure is best applied by a **TOURNIQUET**, although the fingers and hand can be used temporarily.

A **TOURNIQUET** is a strip of cloth, bandage or other material, tied above the wound. Place a thick pad, such as a folded handkerchief, on the inside of the arm or leg and under the tourniquet. Loosely tie a simple double knot in the cloth and place a stick or other rigid member between the knots and tighten the outer knot by pulling the outer ends of cloth.

Twist the stick or rigid member until bleeding stops. DO NOT maintain such pressure longer than 15 minutes at a time.

IF BLEEDING CONTINUES after loosening tourniquet, allow blood to flow for 30 to 60 seconds, then re-apply pressure. Continue this procedure until bleeding has stopped.



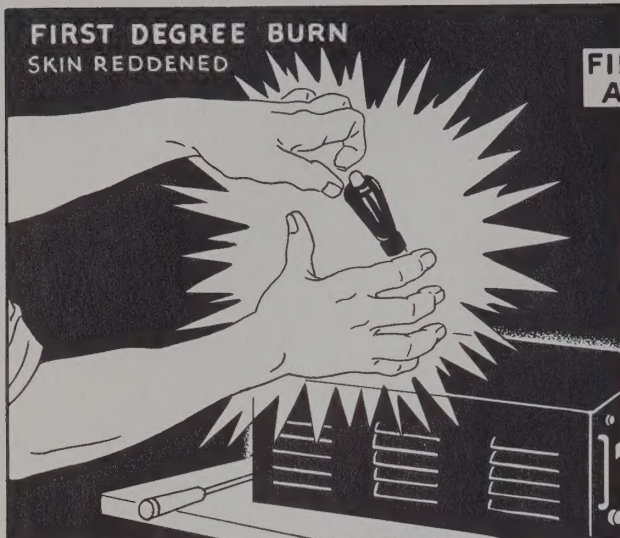
*Pressure Points for
Control of Severe Bleeding*

AFTER BLEEDING HAS STOPPED, the wound should be carefully covered with a sterile dressing. DO NOT TOUCH WOUND OR DRESSING WITH DIRTY HANDS.

OBTAIN THE SERVICES OF A DOCTOR AS SOON AS POSSIBLE.

FIRST AID

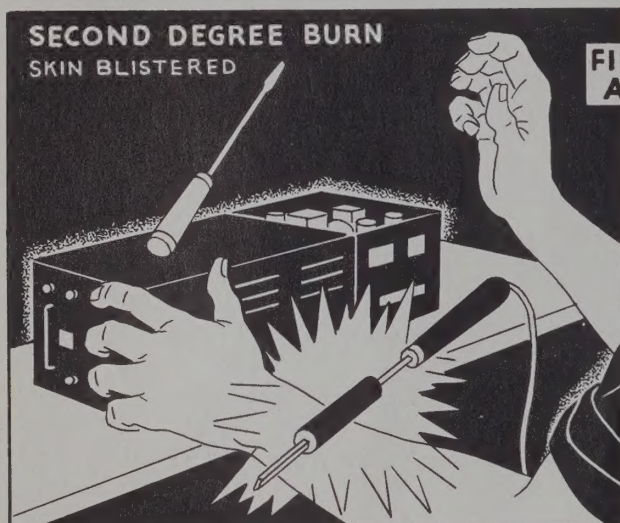
BURNS



FIRST
AID



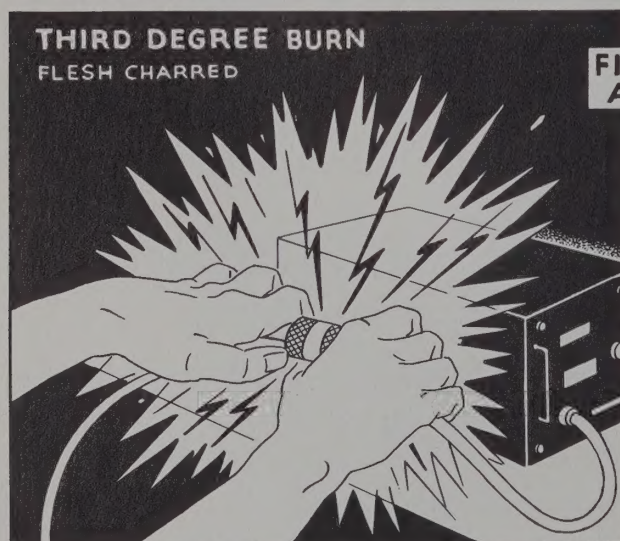
BAKING SODA
UNGUENTINE



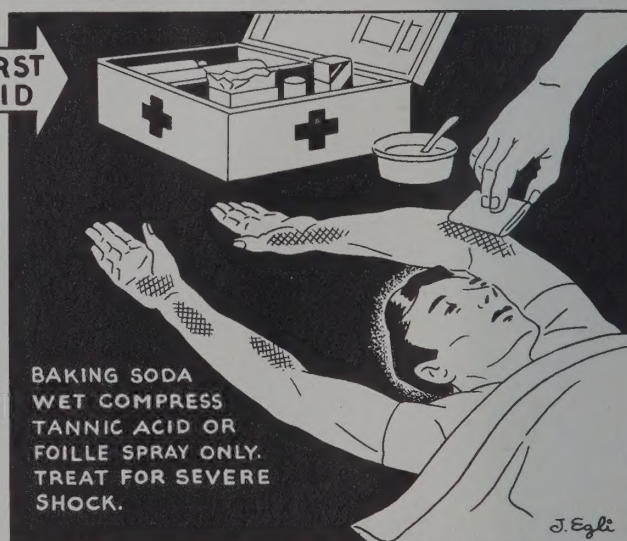
FIRST
AID



BAKING SODA
WET COMPRESS
TANNIC ACID JELLY
FOILLE JELLY
OLIVE OIL, TEA.



FIRST
AID



BAKING SODA
WET COMPRESS
TANNIC ACID OR
FOILLE SPRAY ONLY.
TREAT FOR SEVERE
SHOCK.

J. Egli

GUARANTEE

The equipment including all parts and spare parts, except vacuum tubes, batteries, rubber and material normally consumed in operation, is guaranteed for a period of one year from the date of delivery of the equipment to and acceptance by the Government with the understanding that all such items found to be defective as to material, workmanship or manufacture will be repaired or replaced, f.o.b. any point within the continental limits of the United States designated by the Government, without delay and at no expense to the Government; provided that such guarantee will not obligate the Contractor to make repair or replacement of any such defective items unless the defect appears within the aforementioned period and the Contractor is notified thereof in writing within a reasonable time and the defect is not the result of normal expected shelf life deterioration.

To the extent the equipment, including all parts and spare parts, as defined above, is of the Contractor's design or is of a design selected by the Contractor, it is also guaranteed, subject to the foregoing conditions, against defects in design with the understanding that if ten per cent (10%) or more of any such said item, but not less than two of any such item, of the total quantity comprising such item furnished under the contract, are found to be defective as to design, such item will be conclusively presumed to be of defective design and subject to one hundred per cent (100%) correction or replacement by a suitably redesigned item.

All such defective items will be subject to ultimate return to the Contractor. In view of the fact that normal activities of the Naval Service may result in the use of equipment in such remote portions of the world or under such conditions as to preclude the return of the defective items, for repair or replacement without jeopardizing the integrity of Naval communications, the exigencies of the Service, therefore, may necessitate expeditious repair of such items in order to prevent extended interruption of communications. In such cases the return of the defective items for examination by the Contractor prior to repair or replacement will not be mandatory. The report of a responsible authority, including details of the conditions surrounding the failure, will be acceptable as a basis for affecting expeditious adjustment under the provisions of this contractual guarantee.

The above one year period will not include any portion of time the equipment fails to perform satisfactorily due to any such defects, and any items repaired or replaced by the Contractor will be guaranteed anew under this provision.

In some cases it has been found necessary to make substitution of original materials. However, all necessary factors have been maintained, so that replacements can be made, and wherever spare parts are involved in the substitutions, the spares are identical to the parts mounted in the equipment. If it is found that the latter cannot be met, special instructions will be issued and supplied for all shipments so affected.

HANDBOOK OF OPERATING INSTRUCTIONS

FOR

Navy Models

ATJ — ATK

*Aircraft Radio Transmitter Equipments
and*

ARJ — ARK

Aircraft Radio Receiver Equipments

SECTION I

GENERAL DESCRIPTION

1.1 PURPOSE.

The Models ATJ and ATK Aircraft Radio Transmitter equipments and the Models ARJ and ARK Aircraft Radio Receiver equipments are designed for installation and use in aircraft.

1.2 EQUIPMENT.

The complete Aircraft Radio Transmitter and Receiver equipments including interconnecting cables are shown on Figure 3. With the exception of the Antennas each equipment is designed to be continuously variable over the required frequency channels. A different Transmitter Antenna is required for each of the transmitting channels. Each Transmitter Antenna is numerically labelled indicating the appropriate channel for which it was designed to operate. The Receiver Antenna is of the wide band type designed to operate over a range of five frequency channels.

Each Transmitting equipment consists of five major units: Conversion Unit, Transmitter, Dynamotor, Filter-Junction Box and Monitor Unit.

Each Receiver equipment consists of two major units: Receiver and Monitor Unit. The Monitor Unit used with the Transmitter equipment is the same Monitor Unit as the one used with the Receiver equipment, the only difference being in the interconnecting cables.

1.3 POWER SUPPLY.

a. The Transmitter equipment is designed to operate from a regulated direct-current power source supplying 27 to 31 volts. When operated at the nominal voltage of 28.6 volts, the current drain is approximately 25 amperes. The standby load is approximately 17 amperes. When using the Monitor Unit with the Conversion Unit, the d-c load is increased by approximately four amperes.

b. The Receiver equipment is designed to operate from a regulated direct-current power source supplying 27 to 31 volts. When operated at the nominal voltage of 28.6 volts, the current drain is approximately 10 amperes. When using the Monitor Unit with the Receiver, the d-c load is increased by approximately four amperes.

Paragraph 1.4

1.4

TABLE OF MAIN COMPONENTS

Model	CRV No.	Name of Unit	Width	Dimensions in Inches Depth	Height	Weight* Pounds
ATJ	TRANSMITTER EQUIPMENTS					
	59AAE	Conversion Unit	9-13/32	23-15/32	11-3/4*	34
	52ABW	Radio Transmitter	12-13/64	18-1/32	9-31/32*	26
	60ABK	Monitor Unit	8-21/32	19-5/8†	10-17/32*	30†
	CEK-21981	Dynamotor	13-13/32	6-1/2	9-9/32*	26-1/4
	53AAB	Filter-Junction Box	8-33/64	7-27/32	5-9/64	8
	66AED to 66AEH	Antenna Assemblies, cylindrical radiator with cylindrical ground rods. One channel each of five lower channels.		See Fig. 4 and "Handbook of Maintenance Instructions."		
	66AFX to 66AGB	Antenna Assemblies, elliptical radiator with elliptical ground rods. One channel each of five lower channels.		See Fig. 5 and "Handbook of Maintenance Instructions."		
ATK	52AAE	Conversion Unit	9-13/32	23-15/32	11-3/4*	34
	52ACB	Radio Transmitter	12-13/64	18-1/32	9-31/32*	26
	60ABK	Monitor Unit	8-21/32	19-5/8†	10-17/32*	30†
	CEK-21981	Dynamotor	13-13/32	6-1/2	9-9/32*	26-1/4
	53AAB	Filter-Junction Box	8-33/64	7-27/32	5-9/64	8
	66AFX to 66AGB	Antenna Assemblies, elliptical radiator with elliptical ground rods. One channel each of five lower channels.		See Fig. 5 and "Handbook of Maintenance Instructions."		
	66AEJ to 66AEN	Antenna Assemblies, elliptical radiator with elliptical ground rods. One channel each of five upper channels.		See Fig. 5 and "Handbook of Maintenance Instructions."		
	RECEIVER EQUIPMENTS					
ARJ	46ACC	Radio Receiver	17-7/8	22-3/8†	10-13/32*	53-3/4†
	60ABK	Monitor Unit	8-21/32	19-5/8†	10-17/32*	30†
	66ADT	Antenna Assembly, cylindrical radiator with cylindrical ground rods. Five lower channels.		See Fig. 4 and "Handbook of Maintenance Instructions."		
	66AFW	Antenna Assembly, elliptical radiator with elliptical ground rods. Five lower channels.		See Fig. 5 and "Handbook of Maintenance Instructions."		
ARK	46ACD	Radio Receiver	17-7/8	22-3/8†	10-13/32*	53-3/4†
	60ABK	Monitor Unit	8-21/32	19-5/8†	10-17/32*	30†
	66AFW	Antenna Assembly, elliptical radiator with elliptical ground rods. Five lower channels.		See Fig. 5 and "Handbook of Maintenance Instructions."		
	66ADU	Antenna Assembly, elliptical radiator with elliptical ground rods. Five upper channels.		See Fig. 5 and "Handbook of Maintenance Instructions."		

NOTE: Weights are approximate due to possible substitution of materials. CRV numbers do not include shock mountings.

* With shock mounting.

† Without light shield.

SECTION II INSTALLATION

IMPORTANT

The installation should only be made under the supervision of personnel specifically trained for the job. Satisfactory performance of the Models ATJ, ATK, ARJ, and ARK Equipments is dependent upon proper arrangement and installation of the antennas. Determination of the best antenna arrangement for a specific application involves technical considerations which are beyond the scope of this manual. In every application which involves a new aircraft design and/or a different combination of other radio equipment, the antenna layout should be approved by the man in charge who is thoroughly familiar with the basic principles explained in the "Handbook of Maintenance Instructions."

WARNING

The large vacuum tubes associated with this equipment should not be handled unless shatter-proof goggles and heavy gloves are worn. Personnel not so equipped should be kept away while handling these tubes.

2.1 GENERAL.

The more important considerations in the installation of this equipment are:

- a. Correct power supply voltage.
- b. Vibration.
- c. Ventilation.
- d. Accessibility.

Particular care should be given the Conversion Unit and the Transmitter as to vibration and ventilation.

Before installation the cases of the Conversion Unit, Transmitter, Monitor Unit and Receiver should be removed and the units carefully inspected to be sure all vacuum tubes are firmly seated in their sockets and that all grid and plate caps are in place. Remove any packing material used to protect vacuum tubes during shipment.

The Conversion Unit case can be removed by loosening the two slide snap fasteners in the rear of the unit and pulling the case toward the rear.

The Transmitter case can be removed by loosening the six captive screws located on the outer edges of the front panel and removing four machine screws and large

washers located on the bottom of the unit, and then pulling the case toward the rear.

The Monitor Unit case can be removed by loosening the two slotted (Dzus) fasteners located on the front panel by turning them $\frac{1}{4}$ turn in a counter-clockwise direction, and then pulling the case towards the rear.

The Receiver case can be removed by loosening the four captive screws (two on the top near the front panel and two on the bottom near the front panel) and the two snap slide fasteners on the rear of the unit, and then pulling the case towards the rear.

2.2 MOUNTINGS.

All major units except the Filter-Junction Box are supplied complete with shock mountings which are to be permanently attached to the aircraft structure at the time of installation. The Filter-Junction Box, which does not require shock mounting, is supplied with a mounting plate which is also to be attached to the aircraft structure. All units are readily removable from their mountings.

2.3 LOCATION OF UNITS.

The location of units should be chosen for the particular aircraft. Only personnel in charge of the installation should approve the location of the units before proceeding with the installation. Installation should be such that the Receiver or Monitor Unit indicator screens can be readily viewed by the operator or service personnel.

The first approved installation on each type of aircraft must be planned, made, checked and tested by specifically trained personnel, and then considered as the standard approved style of installation for that particular type of aircraft.

In determining the locations of the units, consideration should be given to the following:

- a. Ample clearance on all sides after the unit is installed, to provide accessibility for servicing, accessibility of controls, ample ventilation and space for cable connections.
- b. Sufficient clearance should be provided to readily permit removal of the units themselves as well as their respective cables, plugs, etc.
- c. The units with cables connected should be permitted to rock freely on their shock mountings without striking other objects.

Paragraphs 2.3-2.7

d. Locations should be chosen that will avoid extending cables in order to minimize cable losses. It is particularly important that the transmission line from the Transmitter Antenna to the Transmitter be kept as short as possible to avoid excessive r-f losses.

2.4 INSTALLATION DIAGRAMS.

Outline and Installation diagrams with dimensions and weights are given on the following drawings:

<i>Unit</i>	<i>Drawing No.</i>	<i>Figure No.</i>
Transmitter Equipment		
a. Conversion Unit	T-256168	6
b. Transmitter	T-256166	7
c. Dynamotor	T-256164	8
d. Filter-Junction Box . . .	T-256179	9
e. Monitor Unit	T-256167	10
f. Transmitter Antennas . .	(See "Handbook of Maintenance Instructions" for dimensions)	4 and 5

<i>Unit</i>	<i>Drawing No.</i>	<i>Figure No.</i>
Receiver Equipment		
a. Receiver	T-256163	11
b. Monitor Unit	T-256167	10
c. Receiver Antennas	(See "Handbook of Maintenance Instructions" for dimensions)	4 and 5

2.5 CONVERSION UNIT, TRANSMITTER, DYNAMOTOR, MONITOR UNIT AND RECEIVER.

The general recommendations given in paragraphs 2.1 and 2.3 should be followed, in so far as possible, in determining the individual locations of these units. Sufficient space for air circulation to insure satisfactory cooling is of particular importance for the Transmitter.

The location chosen for the Receiver and the Monitor Unit must be such that direct light does not fall on the indicator screen and that ample space is available in front of these units for viewing purposes.

To install any of these units refer to the installation diagrams listed in paragraph 2.4 for detailed dimensions, clearances and drilling information.

With the exception of the Dynamotor the unit to be installed should be removed from its shock mounting frame by loosening the two knurled head clamping screws in the front and sliding the unit forward until the rear centering pins are disengaged. The unit may then be removed by sliding it forward or raising it vertically. The Dynamotor should be removed from its shock mounting by releasing the four slide snap fasteners and raising

the unit vertically. Carefully determine the correct locations and accurately drill twenty holes in the mounting surface according to the drilling plan on the installation diagram. Fasten the shock mounting frame to the aircraft structure by means of No. 8-32 properly plated machine screws, properly plated flat washers, and elastic stop nuts (not supplied by the equipment manufacturer). Make sure that a tight mechanical and a good electrical bonding is made to the aircraft structure at each shock mount foot. The Conversion Unit, Transmitter, Monitor Unit or Receiver can then be mounted by placing the unit on the shock mounting frame and sliding it back until the centering pins in the rear of the unit are engaged. Fasten the unit in place by pulling the knurled-head clamping screws up over the clamping brackets in the front of the unit and tightening the knurled-head clamping screws. The Dynamotor can be mounted by placing the unit on the shock mounting frame and closing the four slide snap fasteners. After installation the slide snap fasteners should be safety wired.

2.6 FILTER-JUNCTION BOX.

This unit should be so installed that the front panel is readily accessible for the insertion of plugs and connectors. It should be located close to the Dynamotor and relatively near to the Conversion Unit. The cable between the Filter-Junction Box and the Dynamotor should not be lengthened. A mounting plate is supplied as this unit does not require shock mounting.

To install the Filter-Junction Box, remove it from its mounting plate by unlatching the two snap slide fasteners, raise the front of the unit about one-half inch and pull the unit forward until the rear centering pins are disengaged. Carefully determine the correct locations and accurately drill four holes in the mounting surface according to the drilling plan on Figure 9. Fasten the mounting frame to the aircraft structure by means of 1/4-20 properly plated machine screws, properly plated flat washers and elastic stop nuts (not supplied by equipment manufacturer). The unit can then be mounted by placing it on the mounting plate and sliding it back until the centering pins are engaged. With the unit in place, it can be securely fastened by closing the two slide snap fasteners. After installation, the slide snap fasteners should be safety wired.

2.7 ANTENNAS.

a. TRANSMITTER ANTENNA LOCATION.—The Transmitter Antenna Assembly is normally mounted on the upper (top) surface of the aircraft and so located that the radiator is in a vertical position when the aircraft is

in horizontal flight. On installations where the Antenna Assembly is to be mounted above a metallic surface, the distance between the ground rods and the metallic surface should be approximately equal to the distance between the tip of the vertical radiator and the ground rods. In general, the Antenna Assembly should be mounted as far as possible from other objects and high enough so that all or most of the aircraft is below a horizontal plane through the ground rods. The reflector portion of the Antenna Assembly increases the radiated signal in the horizontal direction opposite to the side on which the reflector is located. Therefore, the Antenna Assembly should be properly oriented in relation to the aircraft for proper direction of radiation before fastening the clamping or mounting device. Example: To obtain maximum radiated signal from the tail of the aircraft, mount the Antenna Assembly so that the radiator faces the tail and the reflector faces the nose (front) of the aircraft.

b. RECEIVER ANTENNA LOCATION.—The Receiver Antenna Assembly is normally mounted on the bottom (underneath) surface of the aircraft and so located that the antenna is in a vertical position when the aircraft is in horizontal flight. The vertical distance between the horizontal ground rods and the aircraft structure or other objects should not be less than five inches, more if possible. In general, the ground rod type antenna should be mounted as far as possible from other objects and antennas, and low enough so that most or all of the aircraft is above a horizontal plane through the ground rods. The ground plate type antenna should always be installed on a metallic surface. The circular ground plate should be mounted flush with and carefully bonded to the aircraft mounting surface. Consideration must be given to the action of the aircraft landing gear so that ample clearance between the antenna tip and landing surface is provided to prevent damage to the Antenna Assembly during landing or take-off. Since this antenna is not directional, the only orientation necessary is when using the ground rod type antenna; then the ground rods should be located along a line parallel to the main fuselage to reduce wind resistance. After proper orientation, the clamping device should be firmly tightened to rigidly hold the antenna.

c. ANTENNA INSTALLATION.—Figures 4 and 5 illustrate the types of antennas supplied with this equipment. The matching section of these antennas has a larger cross-section than other parts of the Antenna Assembly and hence it is stronger and provides a means of mounting the Antenna Assembly to the aircraft structure. One suitable method of mounting is to insert the matching section in a split sleeve or cylindrical socket

which is then clamped firmly around the matching section. The required approved mounting device must be available at the point of installation (not supplied by equipment manufacturer). The mounting sleeve or socket should be rigidly fastened to the aircraft structure and precautions taken against loosening due to vibration by making secure with ample size properly plated machine screens, flat washers, lock-washers and nuts if the intervening materials are all metal. If wood or similar substance is at all present, use only properly plated flat washers and elastic stop nuts. The paint on the matching section should not be removed as grounding at this point is of no consequence.

2.8 CABLES.

An equipment Cable diagram with a table giving detailed information of the cable components is shown on Figure 3. For more information regarding the cutting, stripping and assembling of these cables refer to the "Handbook of Maintenance Instructions."

All but two of the cables supplied are fabricated to a given length and completely assembled ready for installation.

CABLES COMPLETELY ASSEMBLED

<i>Cable No.</i>	<i>Function</i>
TRANSMITTER EQUIPMENT	
1	Conversion Unit to Filter-Junction Box
2	Transmitter to Filter-Junction Box
3	Conversion Unit to Transmitter
TRANSMITTER EQUIPMENT	
4	Conversion Unit to Transmitter
7	Filter-Junction Box to Dynamotor
8	Antenna to Transmitter
11	Conversion Unit to Monitor
RECEIVER EQUIPMENT	
12	Receiver to Monitor
13	Receiver to Monitor
14	Antenna to Receiver
15	Receiver to Power Supply
16	Monitor to Power Supply

Two Transmitter equipment cables are supplied with plugs assembled only on the equipment ends.

<i>Cable No.</i>	<i>Function</i>
5	Filter-Junction Box to Power Supply (The power supply end of the cable is to be processed at the time of installation).

Paragraph 2.8

*Cable No.**Function***NOTE**

9

Transmitter to Remote Switch (This cable is cut to the required length with the switch end of the cable processed for connection to the remote switch).

Cables number 6 and number 10 are not used with the equipment.

SECTION III OPERATION

WARNING

Operation of this equipment involves the use of high voltages which are dangerous to life. Personnel must observe all safety regulations at all times.

CAUTION

Under no circumstances should any controls be adjusted except the specific controls listed below. Other adjustments are to be made under "Preparation for Use" as given in "Handbook of Maintenance Instructions" and then only by personnel specifically trained for this procedure.

3.1 CONTROLS—TRANSMITTER EQUIPMENT.

a. CONVERSION UNIT.—There are no operating controls associated with this unit. All adjustments of this unit are to be made just prior to flight. Refer to "Preparation for Use" in the "Handbook of Maintenance Instructions."

b. TRANSMITTER.—The three operating controls are shown on both Figures 1a and 1b. They are designated "AMPLIFIER PLATE TUNING" (which adjusts the amplifier plate line to resonate at the correct fre-

quency), "ANTENNA TUNING" (which adjusts the amount of coupling to the antenna system) and the remotely operated "STANDBY SWITCH" which controls the power to the Master Oscillator and Power Amplifier sections of the Transmitter unit.

c. MONITOR UNIT.—The only operating control associated with this unit is the "POWER" switch located on the front panel. The "POWER" switch controls the low voltage direct current to energize the dynamotor contained within the Monitor Unit. The screwdriver controls located along the bottom of the right side of the unit are not considered operating controls and are to be adjusted, if necessary, as instructed under "Preparation for Use" in the "Handbook of Maintenance Instructions."

3.2 CONTROLS—RECEIVER EQUIPMENT.

a. RECEIVER.—Figures 2a and 2b show the seven operating controls located on the front panel of the Receiver. They are designated "No. 1," "No. 2," "No. 3," "No. 4," "No. 5," "FREQUENCY" (Tuning Control), and "POWER" (on-off switch).

b. MONITOR UNIT.—Except for the interconnecting cables this unit is identical to the Monitor Unit used with the Transmitter Equipment. Refer to paragraph 3.1 (*c*) this section.

RESTRICTED

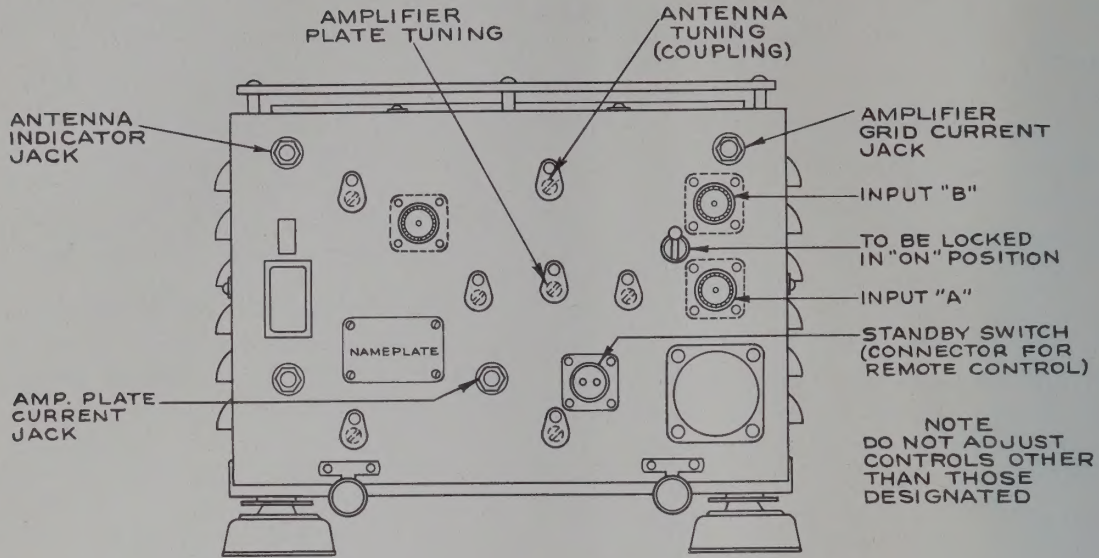


Figure 1a—Radio Transmitter CRV-52ABW, Operating Controls

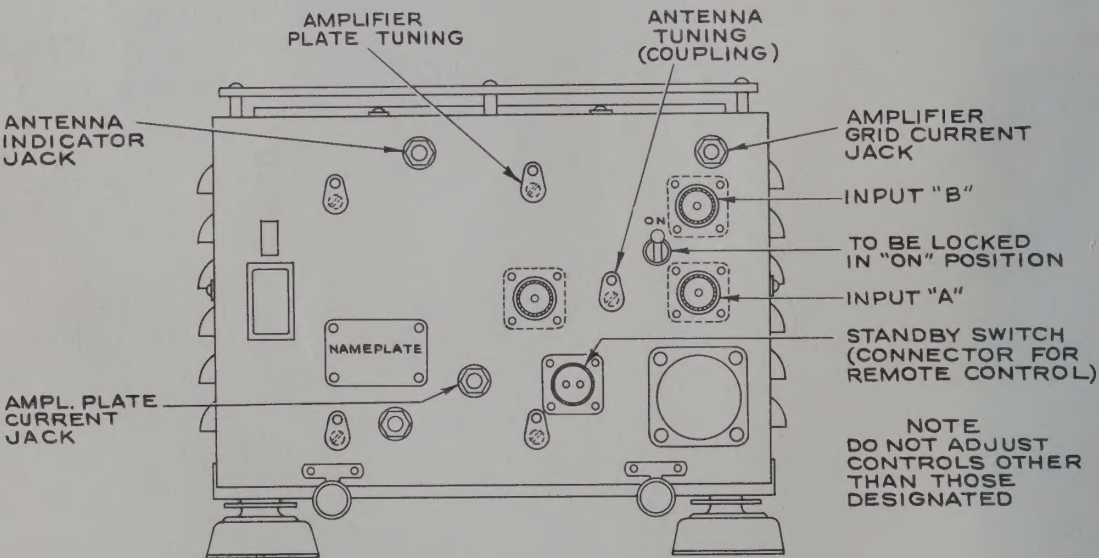


Figure 1b—Radio Transmitter CRV-52ACB, Operating Controls

RESTRICTED

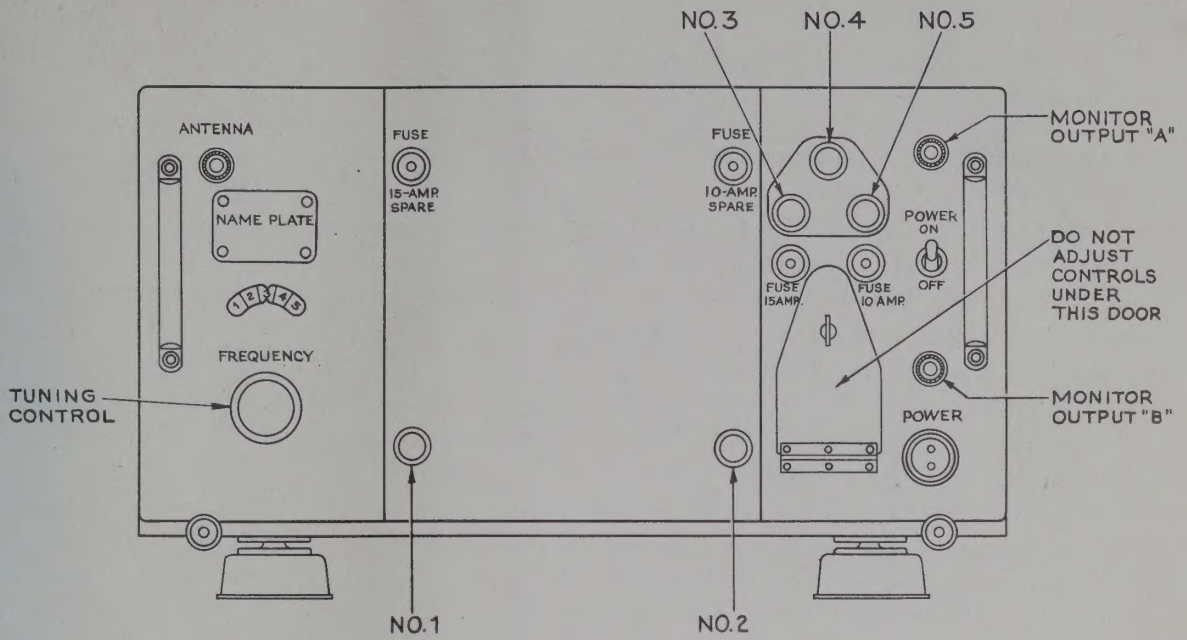


Figure 2a—Radio Receiver CRV-46ACC, Operating Controls

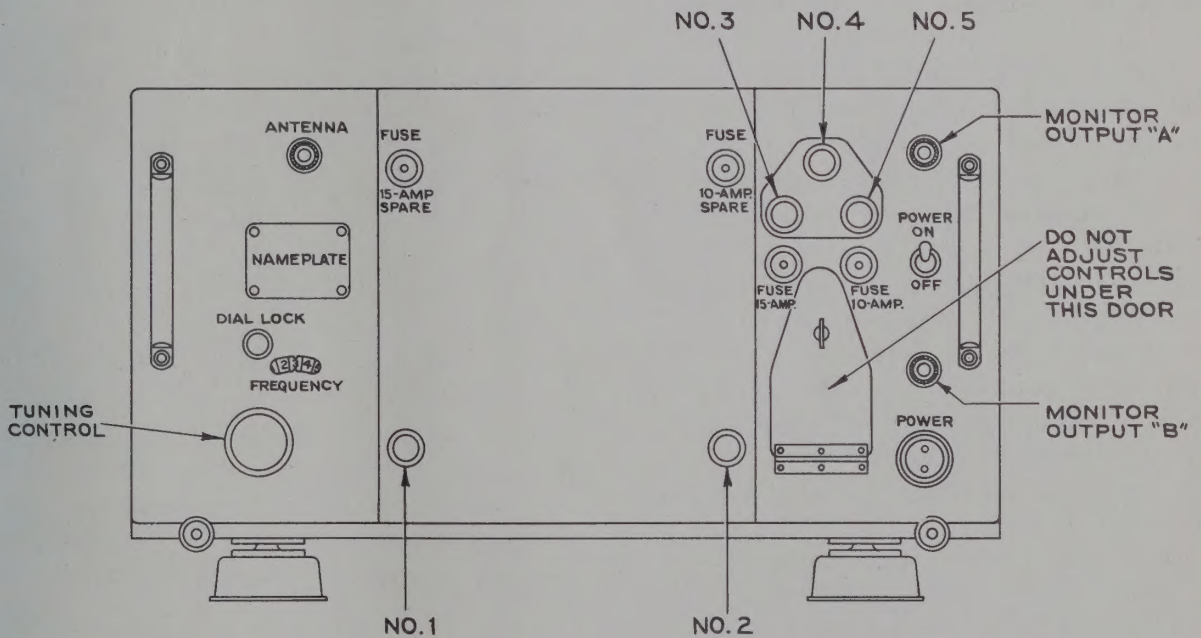


Figure 2b—Radio Receiver CRV-46ACD, Operating Controls

Paragraph 3.3

3.3 STARTING PROCEDURE.

a. GENERAL.—After completing the presetting procedure described under "Preparation for Use" in the "Handbook of Maintenance Instructions," only slight adjustment of the equipment should be necessary after installation in the aircraft.

b. TRANSMITTER EQUIPMENT.—With the Transmitter equipment properly interconnected in accordance with Figure 3 the equipment should be ready for use.

The Monitor Unit is usually used with the Transmitter equipment during the presetting procedure, but seldom during operations. A Test Meter CRV 60058 should be available for use in the following starting procedure:

(1) Check to see that the remotely operated "STANDBY SWITCH" is in the "OFF" position.

(2) Turn the aircraft power supply switch to the "ON" position. Dynamotor hum indicates that the equipment power supply is in operation. Check to see that the d-c power supply voltage (aircraft battery voltage) as measured at the Filter-Junction Box is within operating limits (27 to 31 volts, nominally 28.6 volts). The Conversion Unit and all but the r-f section of the Transmitter should now be energized. Although not necessary, it is customary to wait approximately one minute before performing the next step to allow the vacuum tubes to preheat.

(3) Turn the "STANDBY SWITCH" to the "ON" position. All of the Transmitter equipment, except the Monitor Unit, should now be energized.

(4) Check to see that the d-c power supply voltage at the Filter-Junction Box is within operating limits, nominally 28.6 volts.

(5) Refer to Figure 1 and plug the Test Meter (CRV-60058) into the jack designated "ANTENNA INDICATOR." Slightly retune the "AMPLIFIER PLATE" tuning control (one full turn in either direction should be the maximum adjustment necessary) for maximum indication on the Test Meter.

(6) Plug the Test Meter into the jack designated "AMP. GRID CURRENT." The reading with inputs "A" and "B" connected should be between 10.5 and 12.0 m.a., if not, slightly readjust the control designated "ANTENNA TUNING" until the reading falls within these limits.

(7) If it was necessary to change the adjustment of the "ANTENNA TUNING," it will now be necessary to repeat steps 5 and 6; otherwise the Transmitter equipment is ready for operation.

(8) Plug the test meter into the jack designated

"AMP. PLATE CURRENT." The reading should be between 110 and 125 m.a. with 28.6 volts input to the Filter-Junction Box.

(9) When the Monitor Unit is used with the Transmitter equipment, it is only necessary to turn the Monitor Unit "POWER" switch to the "ON" position. The other controls are preset and should not require further adjustment. The Monitor Unit may be disconnected at any time without altering adjustments to the other equipment.

CAUTION

A final check of the foregoing procedure should be made using a Receiver known to be in good operating condition.

c. RECEIVER EQUIPMENT.—With the Receiver equipment properly interconnected in accordance with Figure 3 the equipment should be ready to use. When using the Monitor Unit with the Receiver equipment, it is advisable to adjust the Receiver first. The Monitor Unit, when properly interconnected with the Receiver, will thus be fed the correct signals for its operation. The following procedure is recommended for starting the equipment:

(1) Turn the aircraft power supply switch to the "ON" position.

(2) Refer to Figure 2 and turn the switch on the Receiver designated "POWER" to the "ON" position. The Receiver should now be energized.

(3) Check to see that the d-c voltage supplied to the Receiver is within operating limits (27 to 31 volts, nominally 28.6 volts). If, after a short warm-up period, a satisfactory image is not received, perform the following steps:

(a) Adjust the control designated "No. 1" to nearly maximum in a clockwise direction.

(b) Adjust the control designated "No. 4" until a pattern of usable brilliancy is visible.

(c) Adjust the tuning control marked "FREQUENCY" until maximum signal strength of the desired signal is shown on the indicator screen.

(d) Adjust the controls designated "No. 3" and "No. 5" until only one image is visible.

(e) Adjust the control designated "No. 2" until the image on the indicator screen is sharply defined.

(f) Readjust the controls designated "No. 1" and "No. 4" until a good compromise is reached giving a satisfactory indication.

(g) Slight retuning of the control marked "FREQUENCY" may be beneficial after the other adjustments are completed.

The Monitor Unit is used whenever a remote viewing position is desired. After connecting the associated cables it is only necessary to turn the Monitor Unit "POWER" switch to the "ON" position. The other controls are pre-set and should not require further adjustment. The Monitor Unit may be disconnected at any time without affecting the adjustments of the other equipment.

3.4 STOPPING PROCEDURE.

When unusual circumstances warrant turning off the equipment by other means than the aircraft power supply switch, any one of the following methods will completely stop the equipment:

a. TRANSMITTER EQUIPMENT.

(1) Disconnect either end of Cable "1" (the power cable between the Filter-Junction Box and the Conversion Unit).

(2) Disconnect either end of Cable "2" (the power cable between the Filter-Junction Box and the Transmitter).

(3) Remove the strap or jumper located under the cap on the "Remote Master Switch" connector on the Filter-Junction Box.

(4) Disconnect Cable "5" (the power cable between the Filter-Junction Box and power supply).

b. RECEIVER EQUIPMENT.

(1) Turn "POWER" switch on Receiver to "OFF" position.

(2) Disconnect power cable from the connector marked "POWER" on the front of the Receiver.

(3) Remove both of the fuses on the front panel of the Receiver, preferably remove the 15 ampere fuse first.

3.5 FUSES.

a. TRANSMITTER EQUIPMENT.—The Monitor Unit contains the only fuses used in the Transmitter equipment. Two five ampere fuses are used in this unit, one in the d-c heater circuits and the other in the d-c input to the dynamotor. Spare fuses are mounted on the front panel.

b. RECEIVER EQUIPMENT.—The Receiver contains two fuses. One ten ampere fuse is used in the d-c heater circuits and one fifteen ampere fuse is used in the d-c input to the dynamotor. Spare fuses are mounted on the front panel. Fuses used in the Monitor Unit are discussed in the foregoing paragraph.

3.6 MAINTENANCE.

The Transmitter and Receiver equipments should be checked prior to each flight for performance and reliability of operation by personnel specifically trained for this purpose, who should be notified of any unusual conditions occurring during operation.

This equipment has been carefully adjusted at the factory for optimum performance, and when properly installed and operated should require only slight attention until after prolonged service. Several minor adjustments may have to be made preceding each flight as given under "Preparation for Use" in the "Handbook of Maintenance Instructions." For complete maintenance instructions refer to the section entitled "Maintenance" in the same instruction book.

a. TRANSMITTER EQUIPMENT

NOTE

Fuses are not used in the Conversion Unit, Transmitter, or Filter-Junction Box.

In the event of failure of the Dynamotor to operate:

(1) Check input voltage at input jacks on Filter-Junction Box. Nominal voltage is 28.6 volts, limits are 27 to 31 volts.

(2) Remove cap on "Remote Master Switch" connector on Filter-Junction Box and check to see that terminals are properly shorted.

(3) Replace Cable "1" (Filter-Junction Box to Conversion Unit) and Cable "2" (Filter-Junction Box to Transmitter) with cables known to be in good operating condition. These cables contain cable-interlocks which protect the remaining equipment when a power cable is inadvertently removed.

In the event the Dynamotor operates with the remaining Transmitter equipment inoperative:

(1) Make sure all cable connectors are tight. If tests indicate trouble in one of the interconnecting cables, a quick check is to substitute a cable known to be good.

(2) Remove the cable from the "Standby Switch" to the Transmitter. Short or place a jumper across terminals of the "Standby Switch" receptacle on the Transmitter. If the Transmitter now operates, it indicates that the remotely operated "Standby Switch" or its associated cable is defective.

In the event the Monitor fails to operate, when connected to a properly operating Conversion Unit (or Receiver):

Paragraph 3.6

- (1) Check fuses on front panel, replace if necessary.
- (2) Check cable connectors to see that they have been properly tightened.
- (3) Replace the Monitor Unit Cables, one at a time, with cables known to be in good condition.

b. RECEIVER EQUIPMENT.

In the event of failure to operate:

- (1) Check the voltage at the equipment end of the power cable feeding the Receiver.
- (2) Check both fuses. Spare fuses are mounted on the front panel of the Receiver.
- (3) If the Receiver apparently operates but without an image, check the Antenna Assembly and associated cable. If possible, a substitute antenna and cable should be tried.

WASHER RCA PART NO.	FERRULE RCA PART NO.	CLAMP CATALOG NO. LESS FIBRE WASHER	CLAMP RCA PART NO.	CABLE CONNECTOR CATALOG NO.	CABLE CONNECTOR RCA PART NO.	CHASSIS CONNECTOR CATALOG NO.	CHASSIS CONNECTOR RCA PART NO.
						AN-3102- 22-24P	P-255073-46
252455-8	K-252505-7	AN-3057-12	M-253375-14	AN-3106- 22-24S	M-253476-7		
252455-8	K-252505-7	AN-3057-12	M-253375-14	AN-3106- 22-24P	M-253476-8		
						AN-3102- 22-24S	P-255073-31
						97-3102- 28-19P- POS.2	M-253475-11
252455-10	K-252505-8	AN-3057-16	M-253375-15	97-3108- 28-19S- POS.2	M-253474-18		
252455-10	K-252505-8	AN-3057-16	M-253375-15	AN-3106- 28-19P	M-253476-9		
						AN-3102- 28-19S	P-255262-22
							M-253709-1
					* M-253709-3		
					* M-253709-3		
							M-253709-1
							M-253709-1
					* M-253709-3		
					* M-253709-3		
							M-253709-1
						AN-3102-22-1P	M-253475-2
252455-8	K-252505-5	AN-3057-12	M-253375-14	AN-3106-22-1S	M-253476-2		
						AN-3102-16S-4S	P-255073-14
						AN-9760-16 MODIFIED	K-251728-2
						97-3102- 28-19S-POS.2	M-253475-1
252455-3	K-252505-3	AN-3057-16	M-253375-15	97-3106- 28-19P-POS.2	M-253476-1		
						AN-3102-28-19P	P-255262-21
252455-3	K-252505-3	AN-3057-16	M-253375-15	AN-3108- 28-19S	M-253474-1		
							M-253709-1
**	K-251793-2				* M-253709-3		
						AN-3102-12S-3S	P-255262-44
**	K-251793-3 K-252505-2	AN-3057-4	P-255073-23	AN-3106- 12S-3P	P-255262-45		
						97-3102-20-4ST	P-255262-23
252455-2	K-252505-1	AN-3057-12	M-253375-14	97-3108-20-4PT	M-253474-3		
252455-5		AN-3057-10	M-253375-36	AN-3106-18-3S	M-253476-6		
						AN-3102-18-3P	P-255262-24
					M-253709-3		
							M-253709-1
					M-253709-3		
							M-253709-1
							M-253709-1
					* M-253709-3		
					* M-253709-3		
							M-253709-1
							M-253709-1
					* M-253709-3		
					* M-253709-3		
							M-253709-1
							M-253709-1
**	K-251793-2				* M-253709-3		
						AN-3102-18-3P	P-255262-24
252455-4	K-252505-4	AN-3057-10	M-253375-36	AN-3108-18-3S	M-253474-4		
						AN-3102-18-3P	P-255262-24
252455-4	K-252505-4	AN-3057-10	M-253375-36	AN-3108-18-3S	M-253474-4		

* SUPPLIED WITH ADAPTER M-253709-2
 ** TO BE CADMIUM PLATED

Figure 3—Equipment Cable Diagram

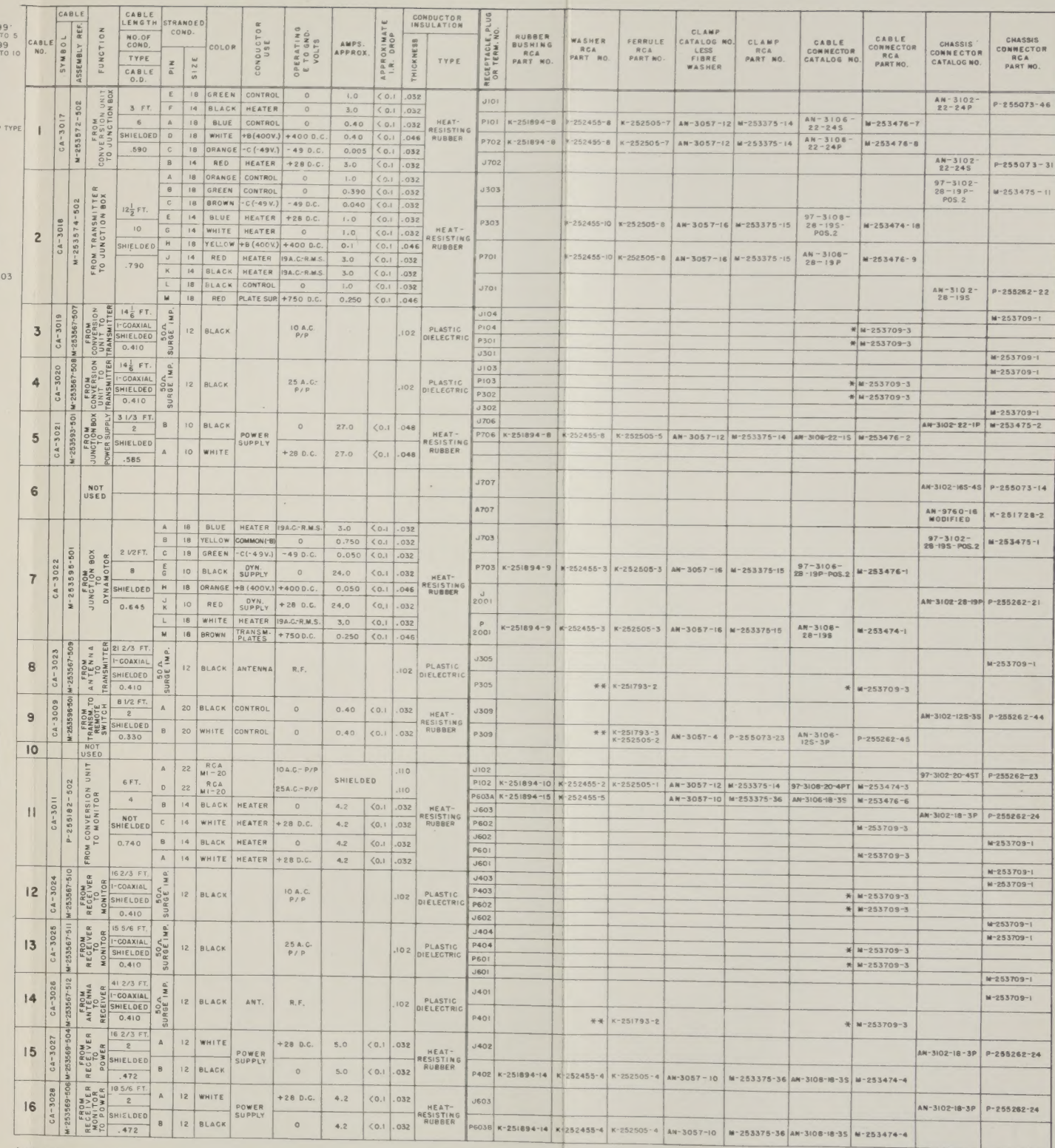
Paragraph 3.6

- (1) Check fuses on front panel, replace if necessary.
- (2) Check cable connectors to see that they have been properly tightened.
- (3) Replace the Monitor Unit Cables, one at a time, with cables known to be in good condition.

b. RECEIVER EQUIPMENT.

In the event of failure to operate:

- (1) Check the voltage at the equipment end of the power cable feeding the Receiver.
- (2) Check both fuses. Spare fuses are mounted on the front panel of the Receiver.
- (3) If the Receiver apparently operates but without an image, check the Antenna Assembly and associated cable. If possible, a substitute antenna and cable should be tried.

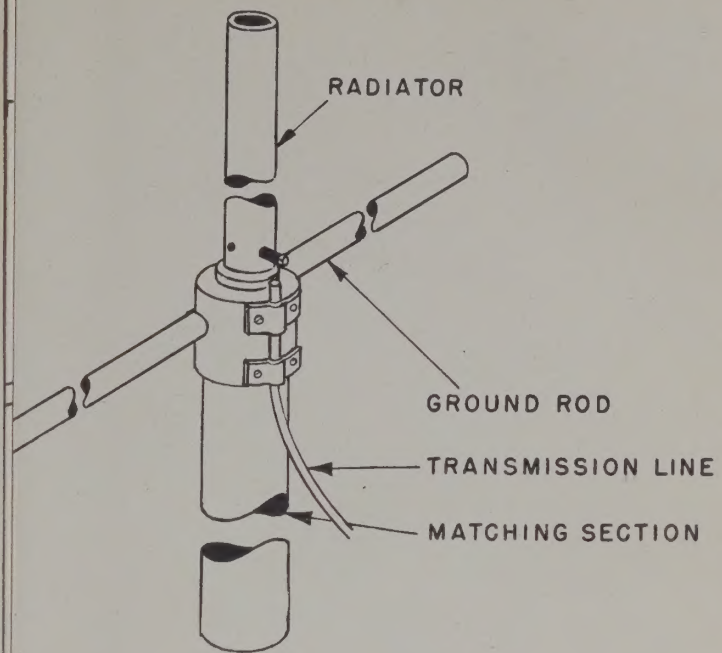


RCA DWG.W-257072

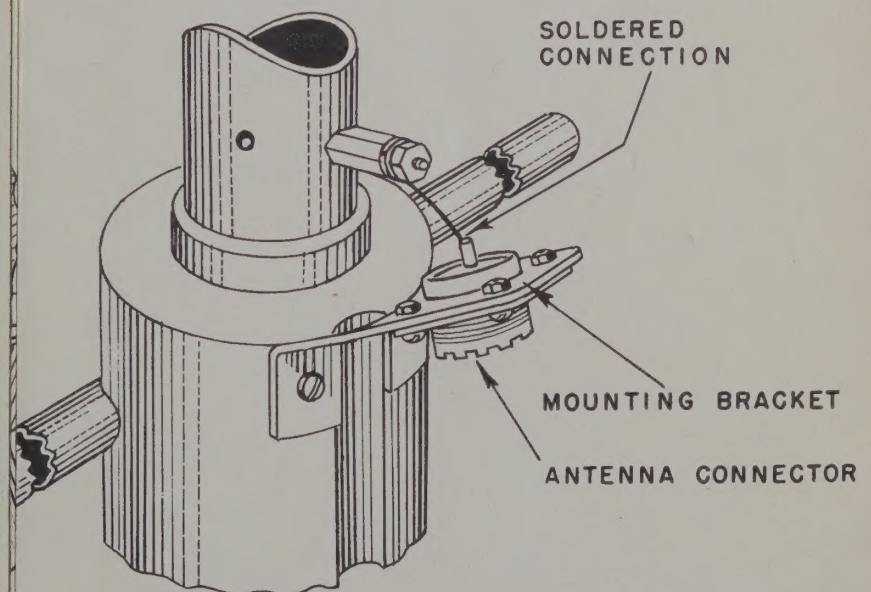
*SUPPLIED WITH ADAPTER M-253709-2
**TO BE CADMIUM PLATED

Figure 3—Equipment Cable Diagram

RECEIVER ANTENNA ASSEMBLY



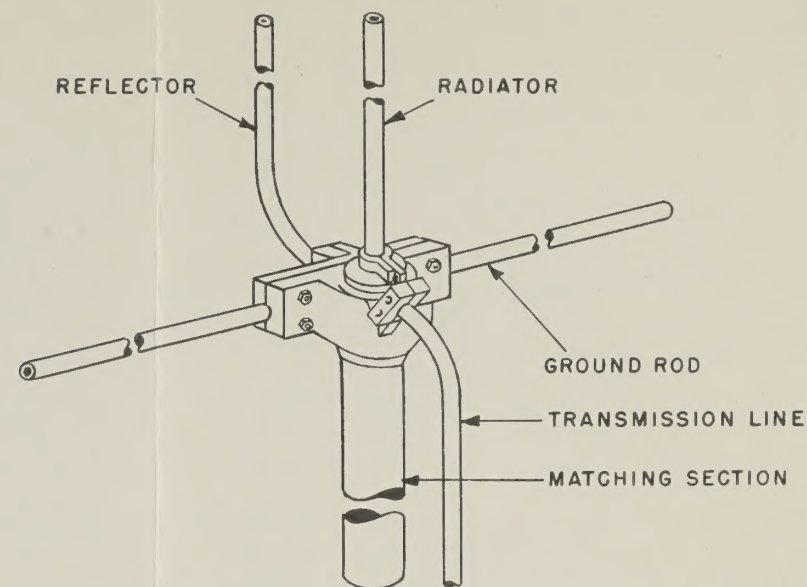
RECEIVER



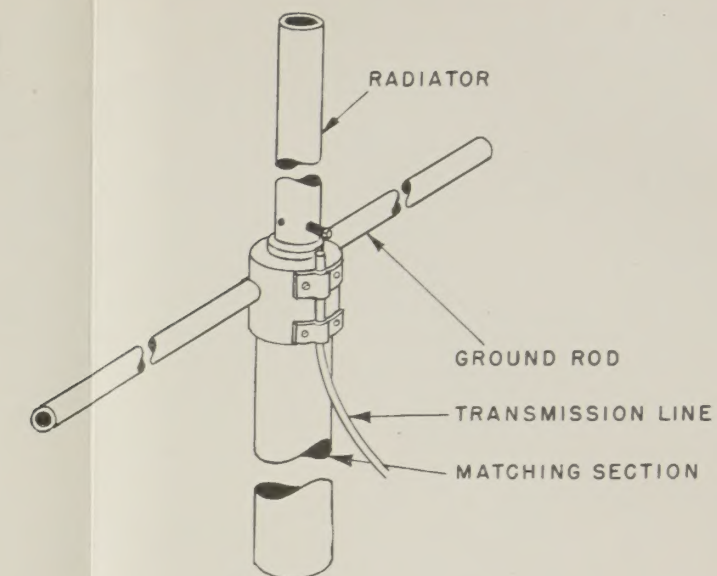
APPLIED USING ANTENNA PLUG CONNECTOR

Figure 4—Antenna Assemblies (Cylindrical Rod Types)

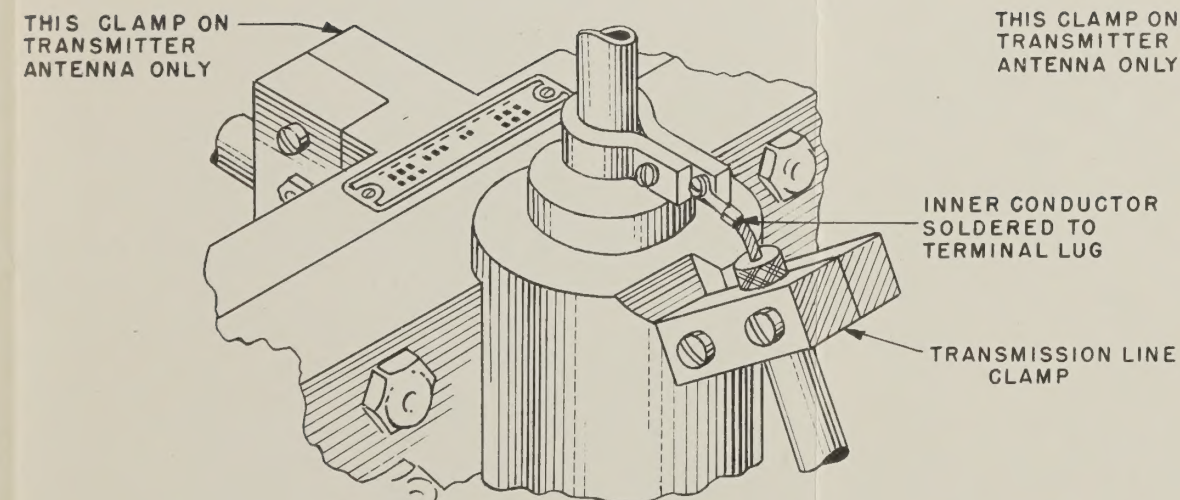
TRANSMITTER ANTENNA ASSEMBLY



RECEIVER ANTENNA ASSEMBLY

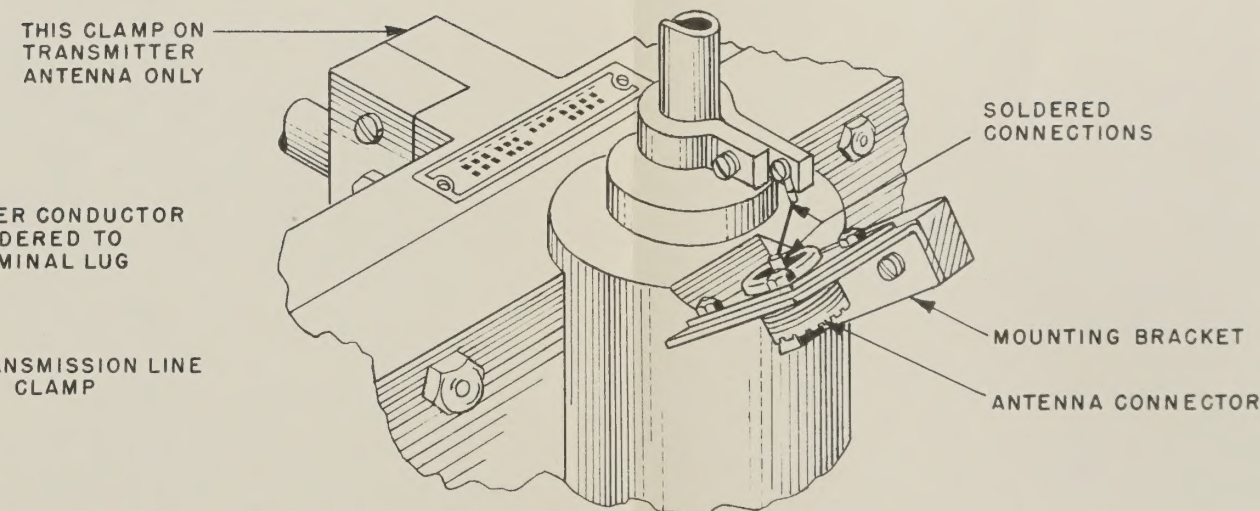


TRANSMITTER



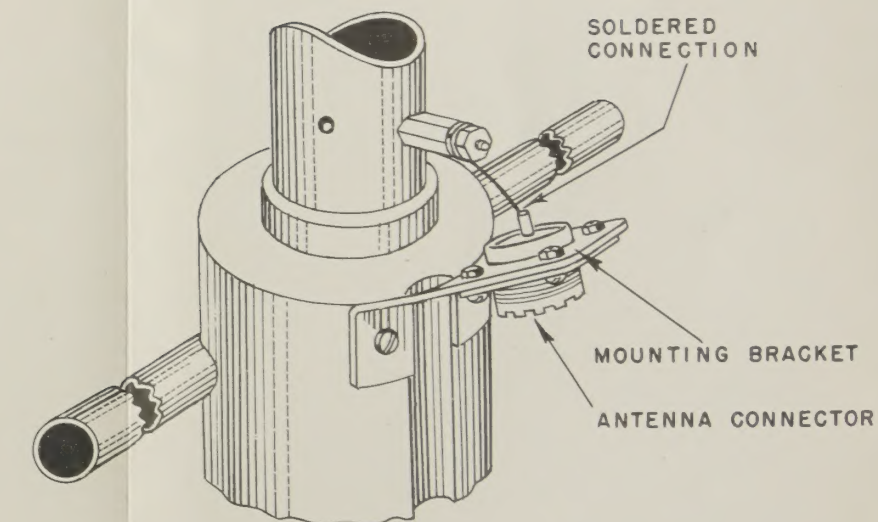
AS SUPPLIED BY MANUFACTURER
USING TRANSMISSION LINE CLAMP.

TRANSMITTER



AS CONVERTED USING ADAPTER (SUPPLIED IN KIT FORM)
FOR EARLY MODELS. LATER MODELS ARE SUPPLIED
EQUIPPED AS ILLUSTRATED.

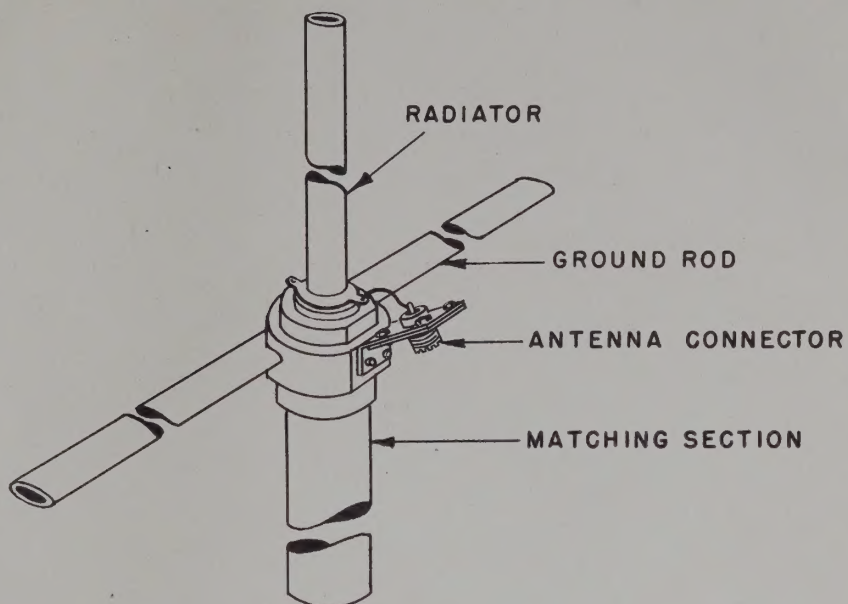
RECEIVER



AS SUPPLIED USING ANTENNA PLUG CONNECTOR

Figure 4—Antenna Assemblies (Cylindrical Rod Types)

RECEIVER ANTENNA ASSEMBLY



RECEIVER ANTENNA ASSEMBLY (GROUND PLATE TYPE)

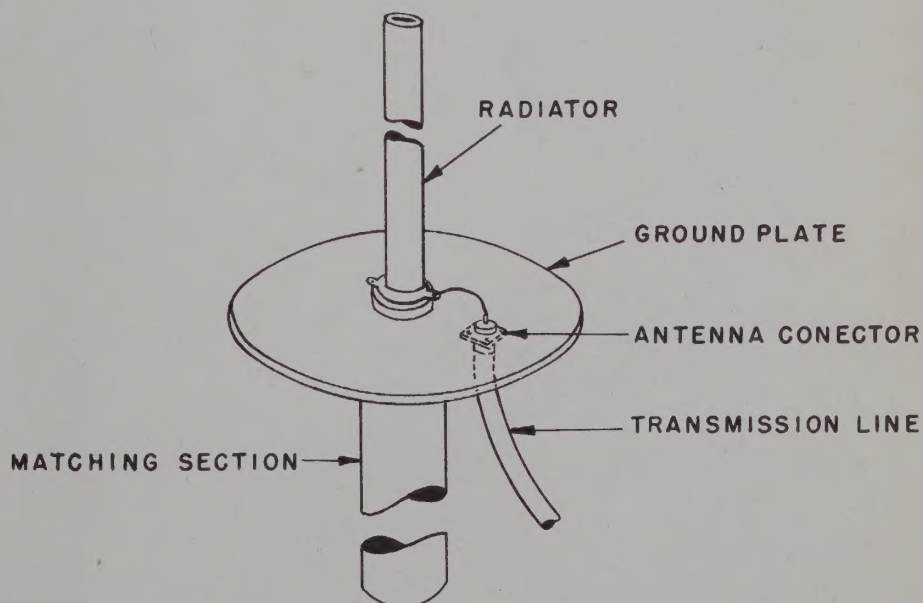
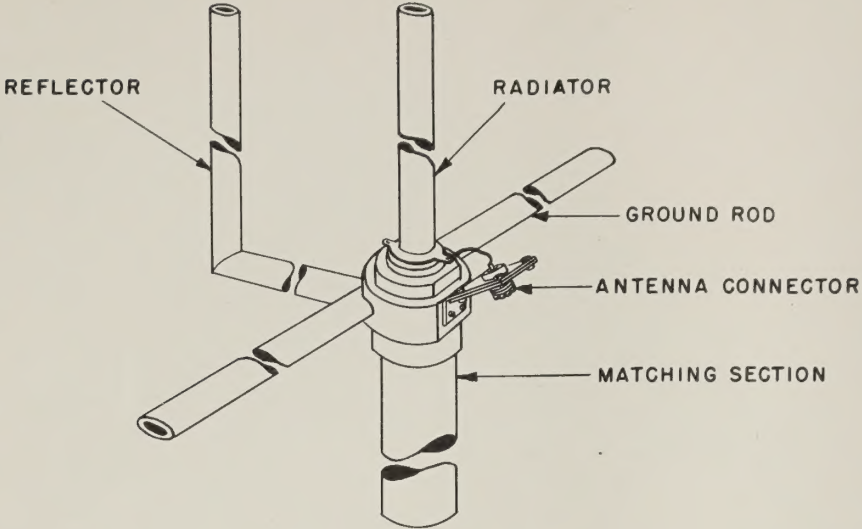
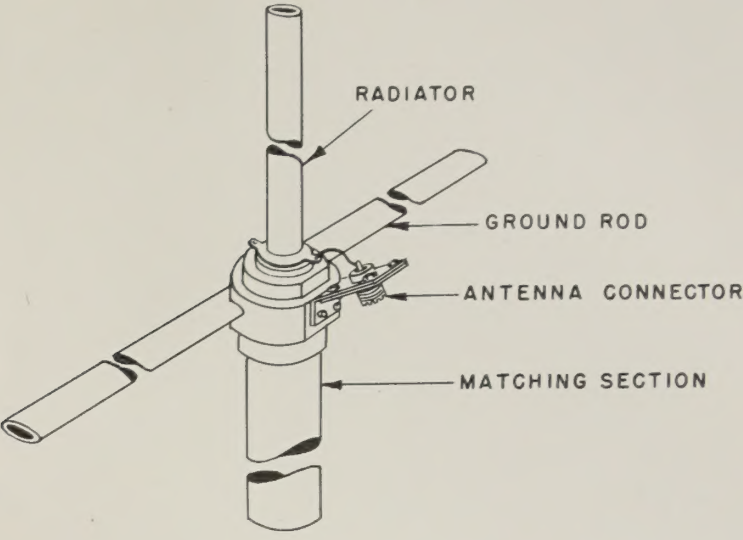


Figure 5—Antenna Assemblies (Elliptical Rod Types)

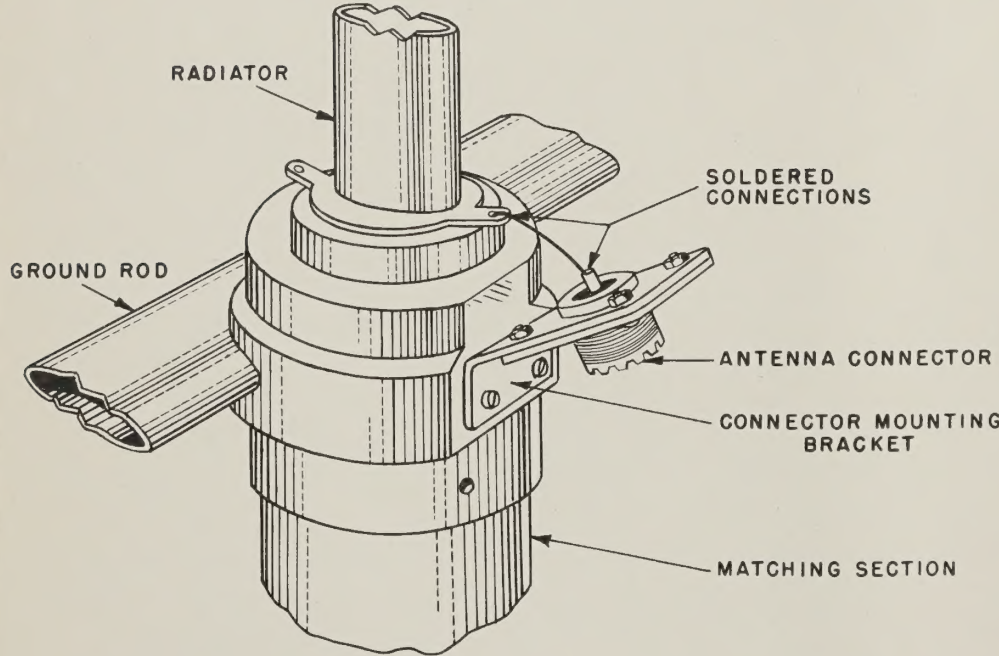
TRANSMITTER ANTENNA ASSEMBLY



RECEIVER ANTENNA ASSEMBLY



ASSEMBLY DETAIL



RECEIVER ANTENNA ASSEMBLY
(GROUND PLATE TYPE)

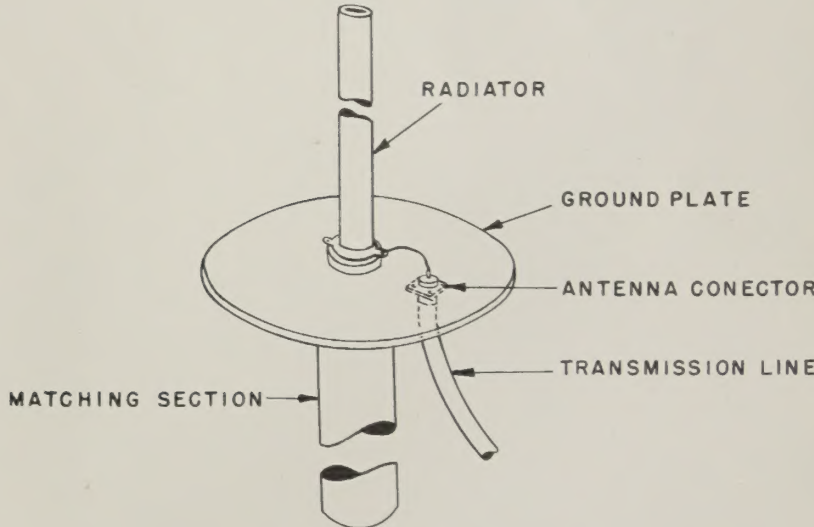
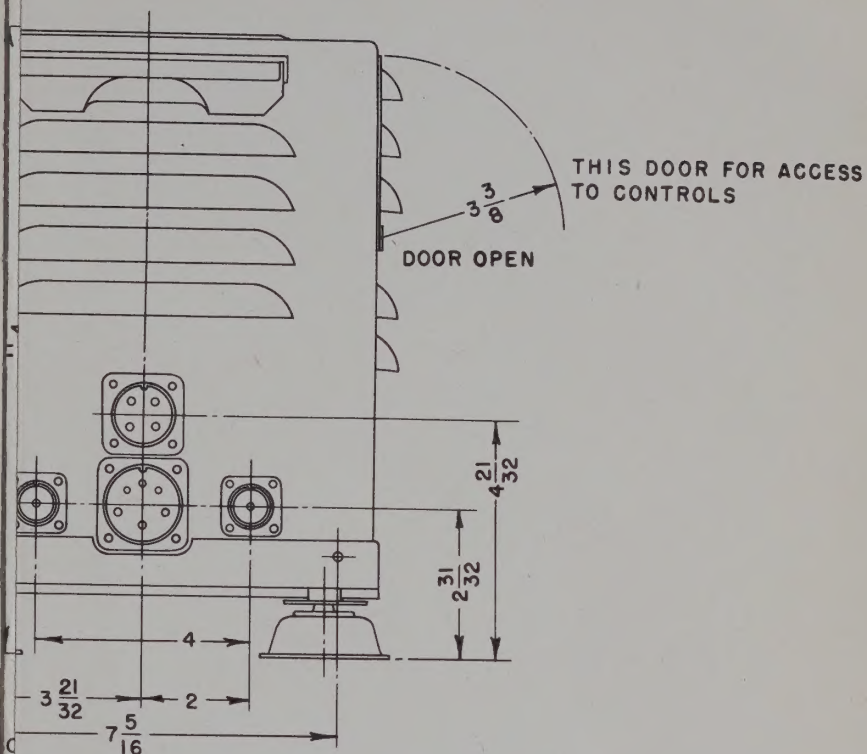


Figure 5—Antenna Assemblies (Elliptical Rod Types)

FIELD



OX. WEIGHT- POUNDS		
ASSEMBLY	SHOCK MTG. ASSEMBLY	TOTAL
	2.5	34

RCA DWG. T-256168

Figure 6—Conversion Unit CRV-59AAE, Installation Diagram

RESTRICTED

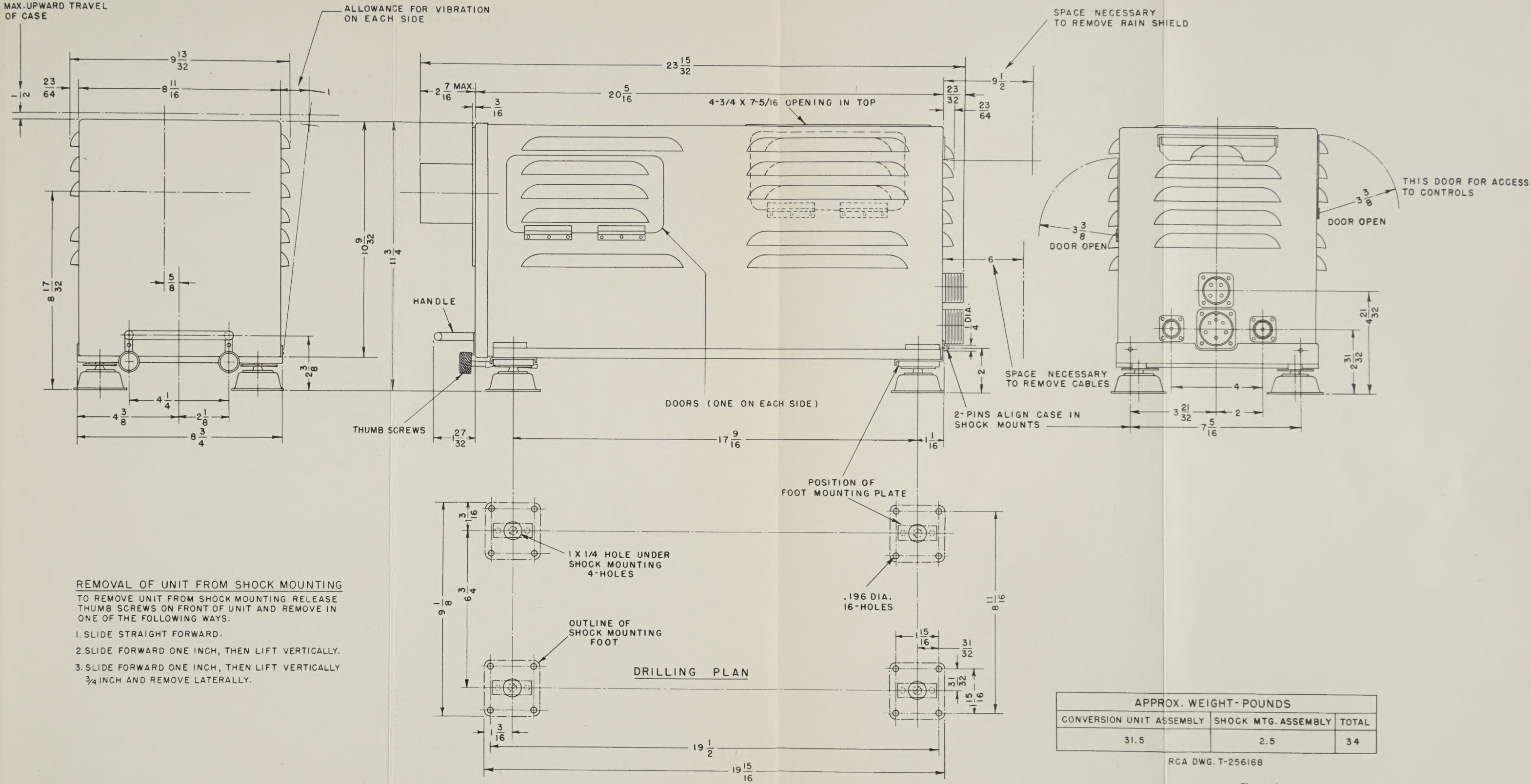
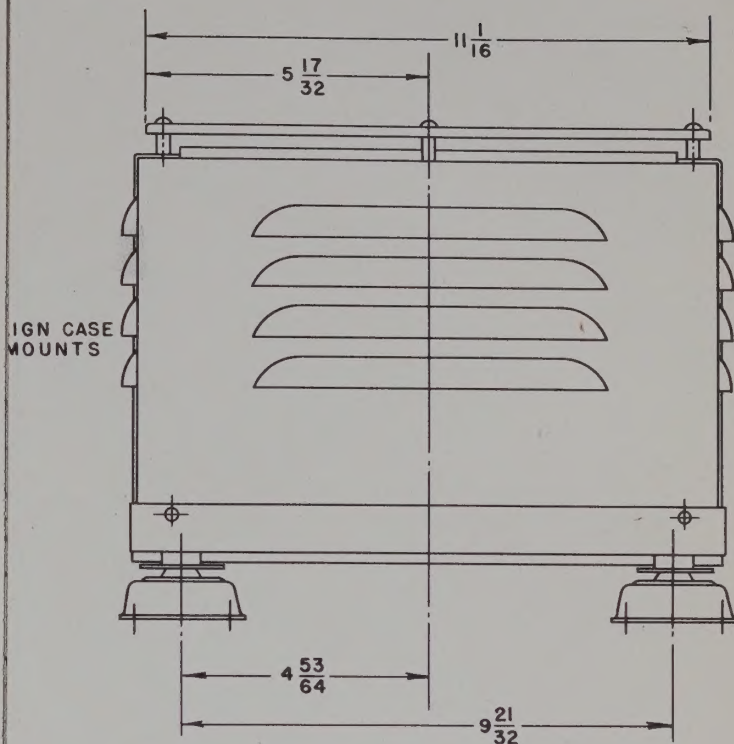


Figure 6—Conversion Unit CRV-59AAE, Installation Diagram

RESTRICTED



REMOVAL OF UNIT FROM SHOCK MOUNTING

TO REMOVE UNIT FROM SHOCK MOUNTING RELEASE THUMB SCREWS ON FRONT OF UNIT AND REMOVE IN ONE OF THE FOLLOWING WAYS:

1. SLIDE STRAIGHT FORWARD.
2. SLIDE FORWARD ONE INCH, THEN LIFT VERTICALLY.
3. SLIDE FORWARD ONE INCH, THEN LIFT VERTICALLY $\frac{3}{4}$ INCH AND REMOVE Laterally.

REQUIRED IN MOUNTING FOR SHOCK MOUNTING

LES
FOOT)

EEP - 4 HOLES UNDER SHOCK MOUNTS
FOOT)

**Figure 7—Radio Transmitters CRV-52ABW and 52ACB,
Installation Diagram**

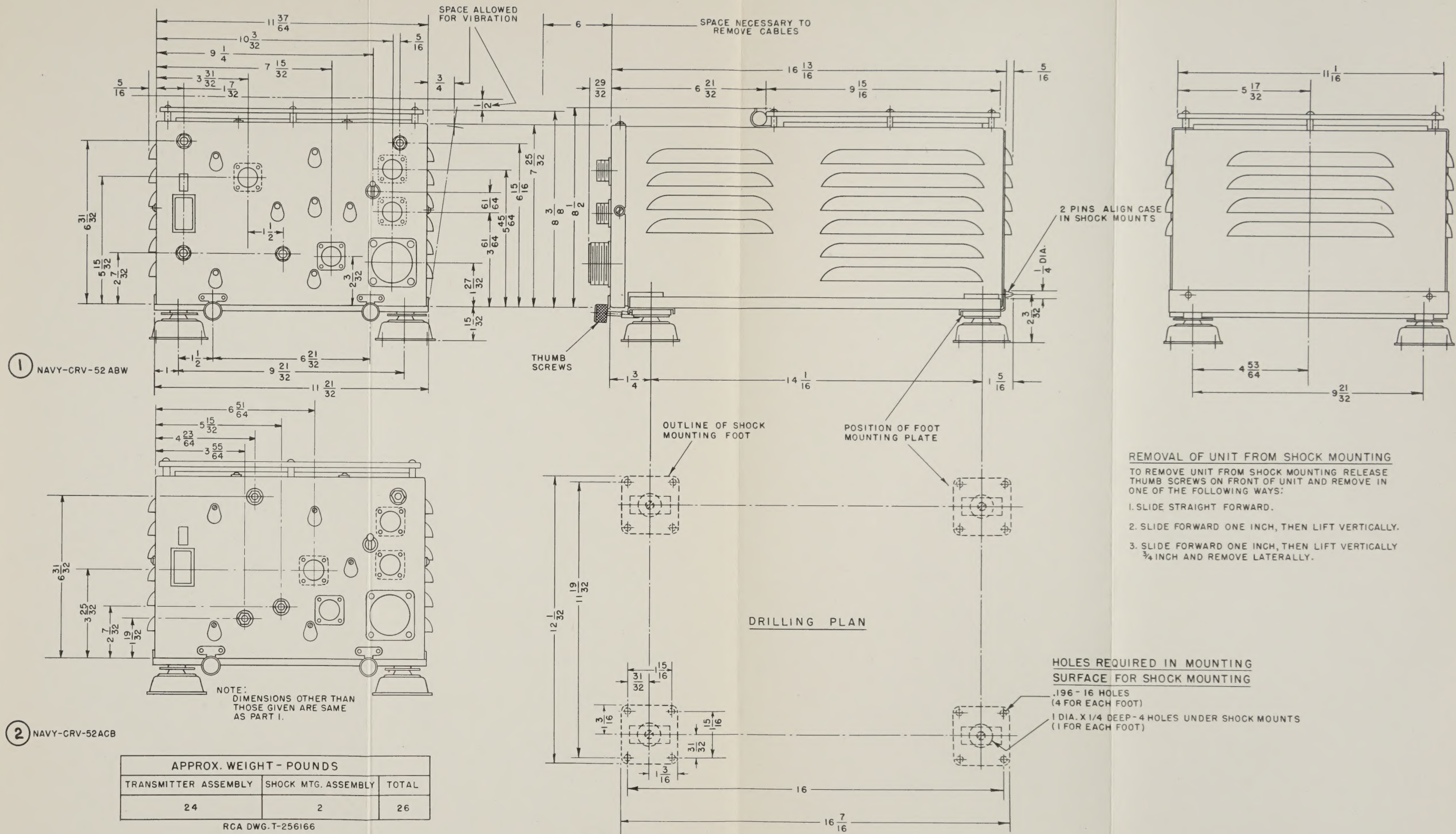
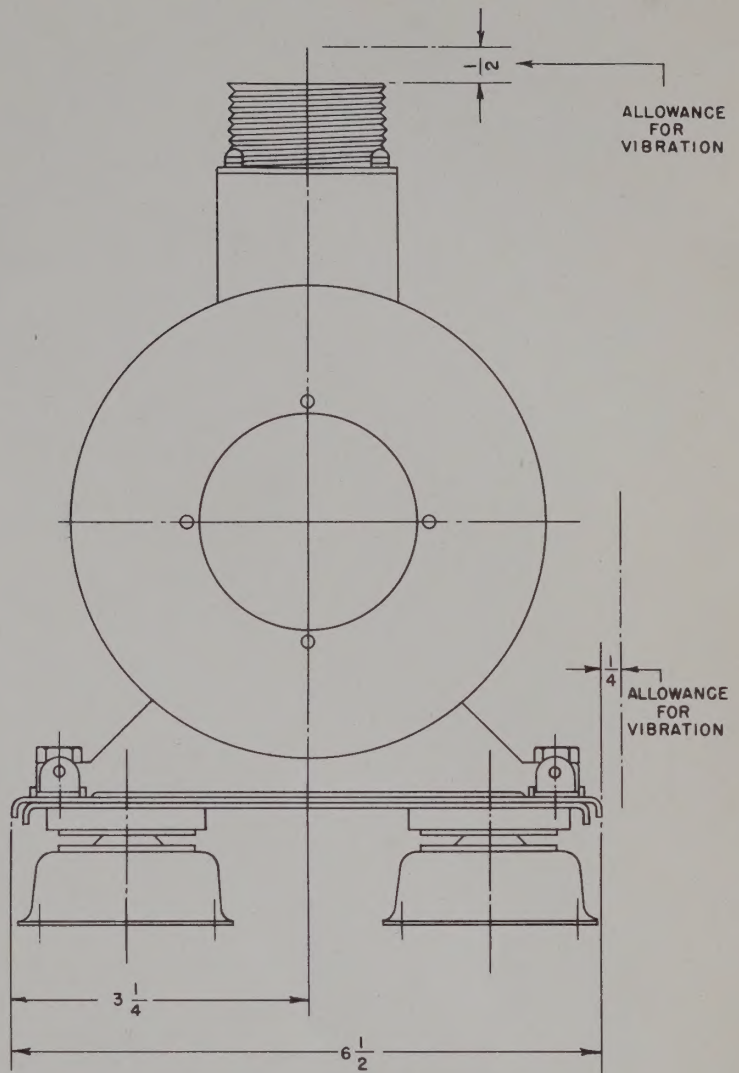
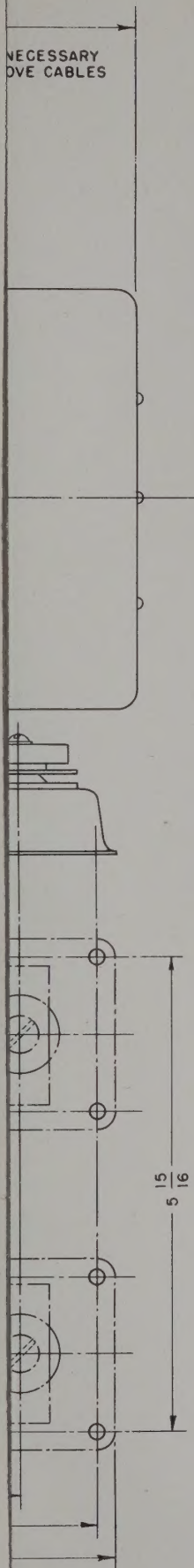


Figure 7—Radio Transmitters CRV-52ABW and 52ACB, Installation Diagram

21-22

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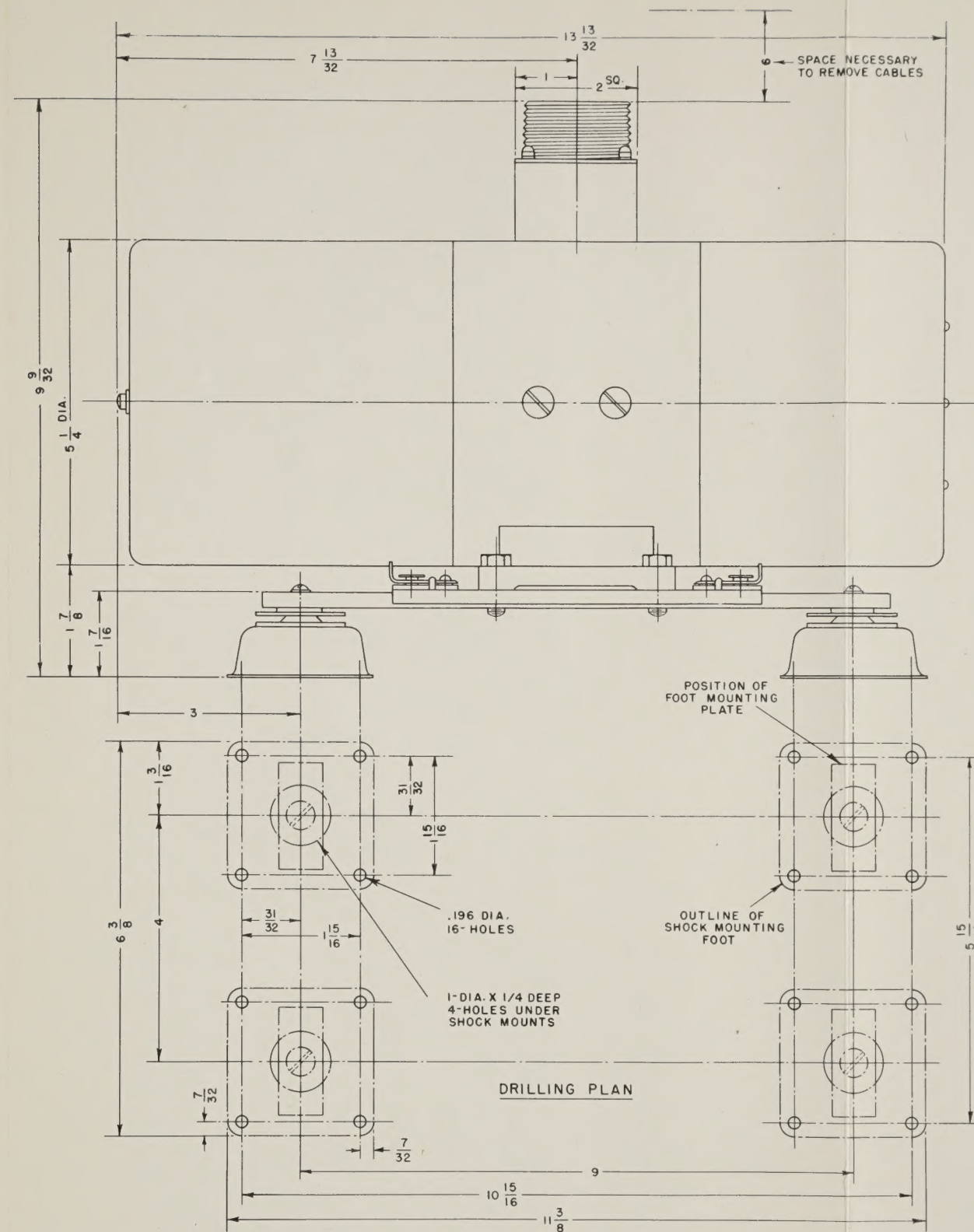


APPROX. WEIGHT - POUNDS			
DYNAMOTOR ASSEMBLY	MTG. PLATE ASSEMBLY	SHOCK MOUNTING ASSEMBLY	TOTAL
23.01	1.0	2 1/4	26 1/4

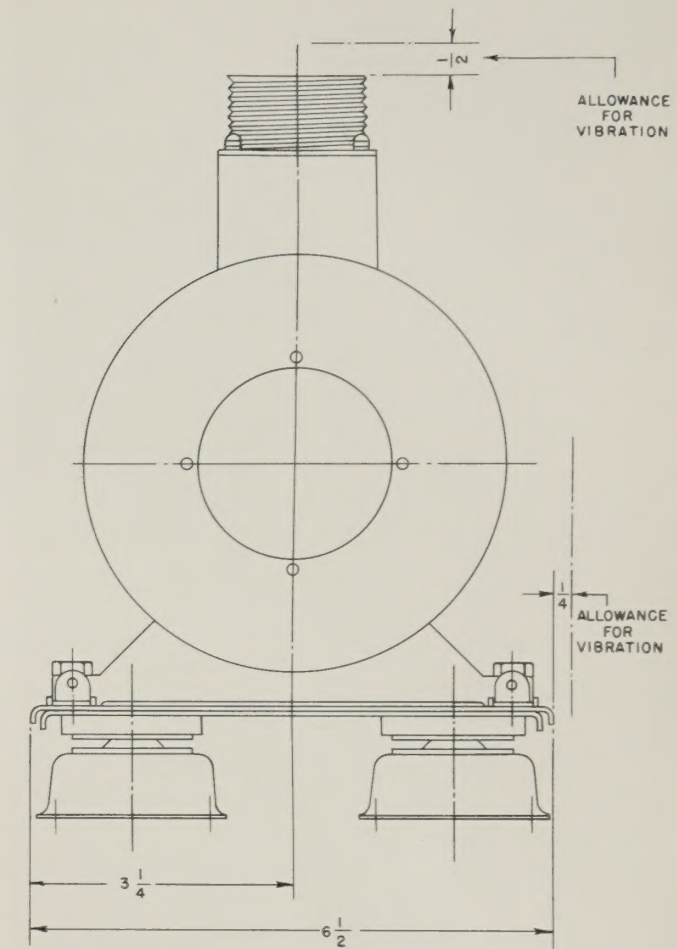
RCA DWG. T-256164

Figure 8—Dynamotor CEK-21981, Installation Diagram

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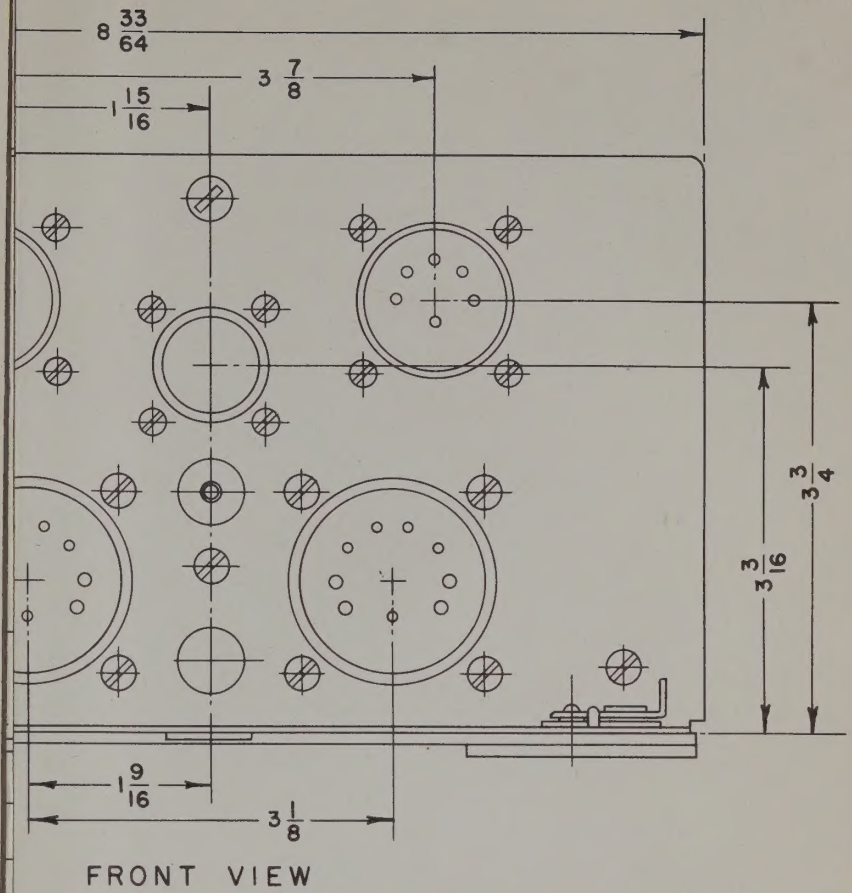
RESTRICTED



APPROX. WEIGHT - POUNDS			
DYNAMOTOR ASSEMBLY	MTG. PLATE ASSEMBLY	SHOCK MOUNTING ASSEMBLY	TOTAL
23.01	1.0	2 1/4	26 1/4

RCA DWG. T-256164

Figure 8—Dynamotor CEK-21981, Installation Diagram



PROX. WEIGHT - POUNDS		
BOX LY	MOUNTING PLATE ASSEMBLY	TOTAL
	1/2	8

RCA DWG. T-256179

Figure 9—Filter-Junction Box CRV-53AAB, Installation Diagram

RESTRICTED

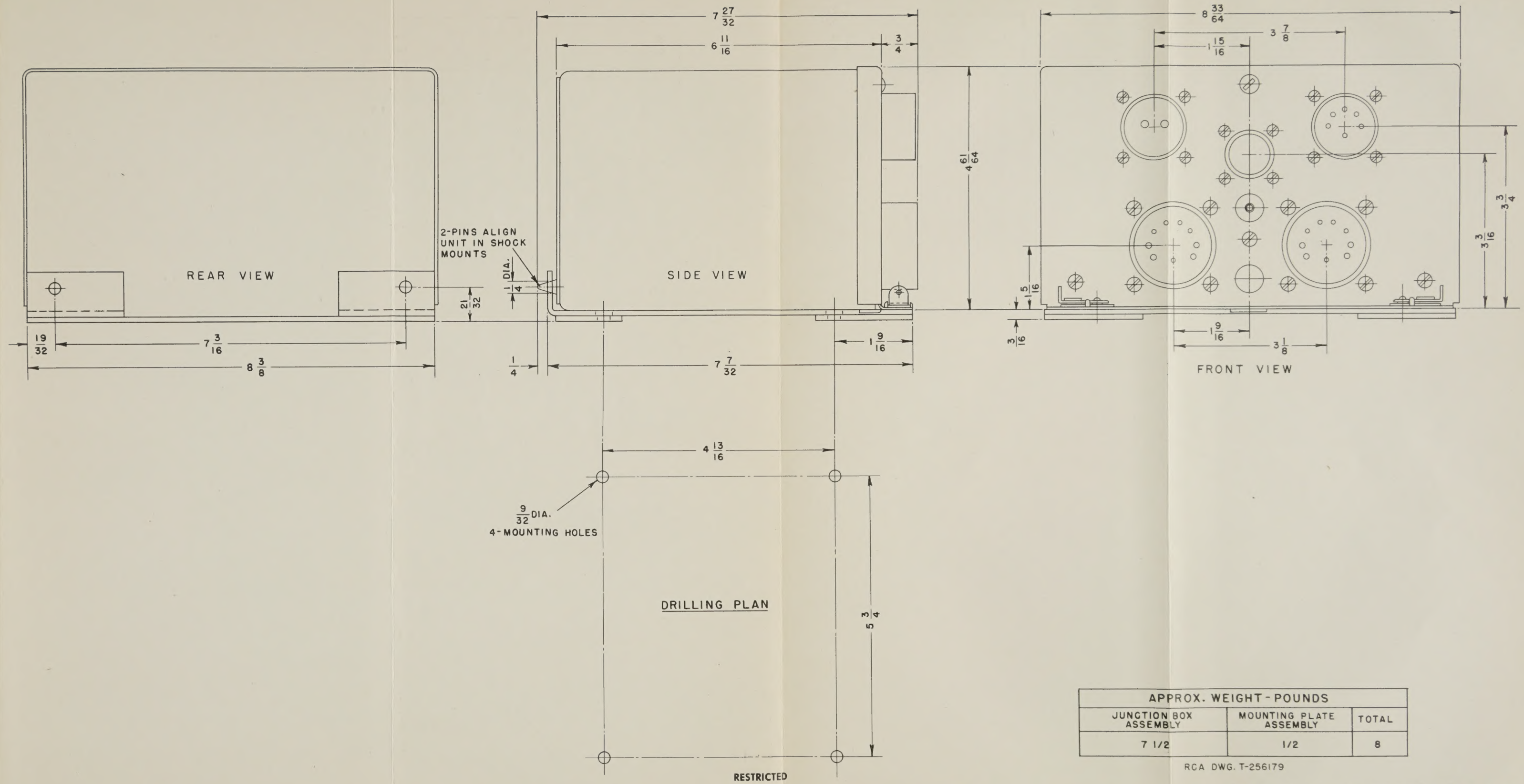
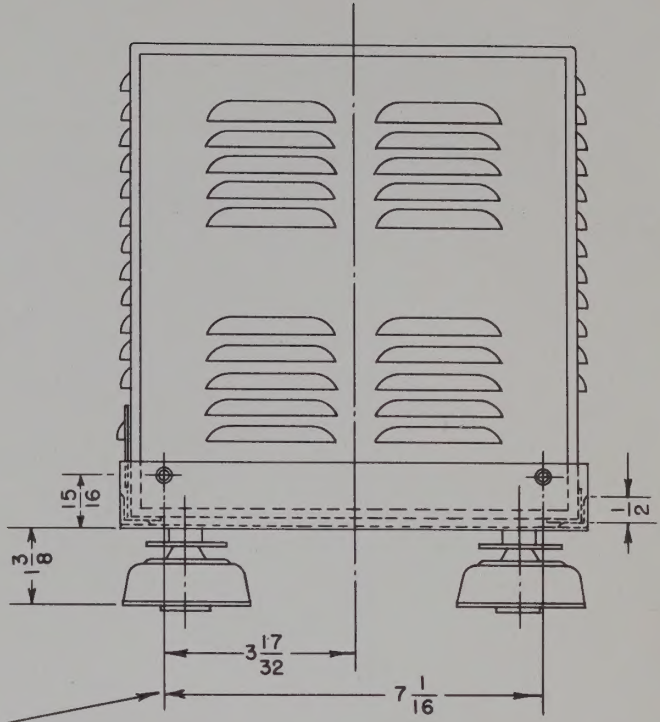


Figure 9—Filter-Junction Box CRV-53AAB, Installation Diagram

IA.
ES

REAR

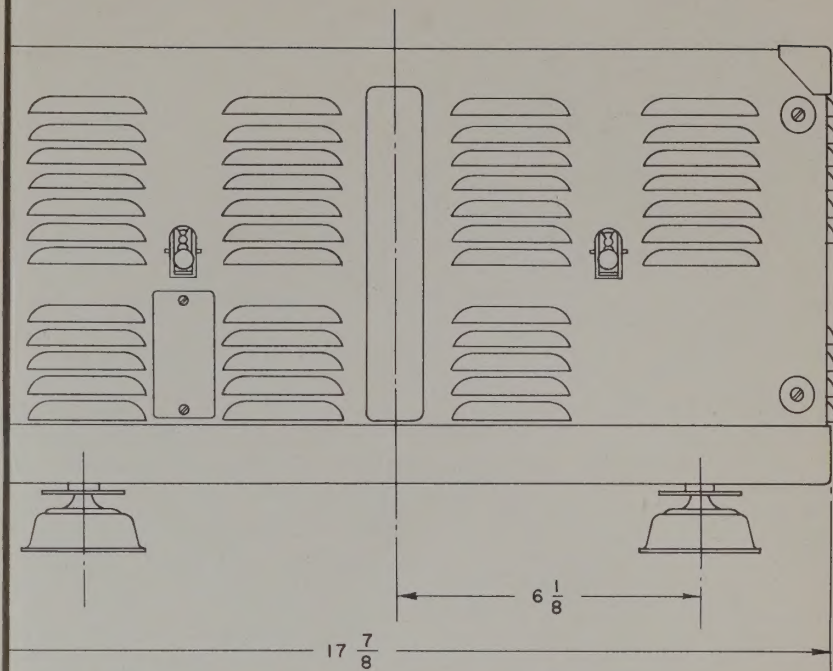
ALIGN UNIT
SHOCK MOUNTS



APPROX. WEIGHT-POUNDS		
MONITOR ASSEMBLY	SHOCK MTG. ASSEMBLY	TOTAL
28	2	30

RCA DWG. T-256167

Figure 10—Monitor Unit CRV-60ABK, Installation Diagram



INSTALLING

REMOVAL OF UNIT FROM SHOCK MOUNTING

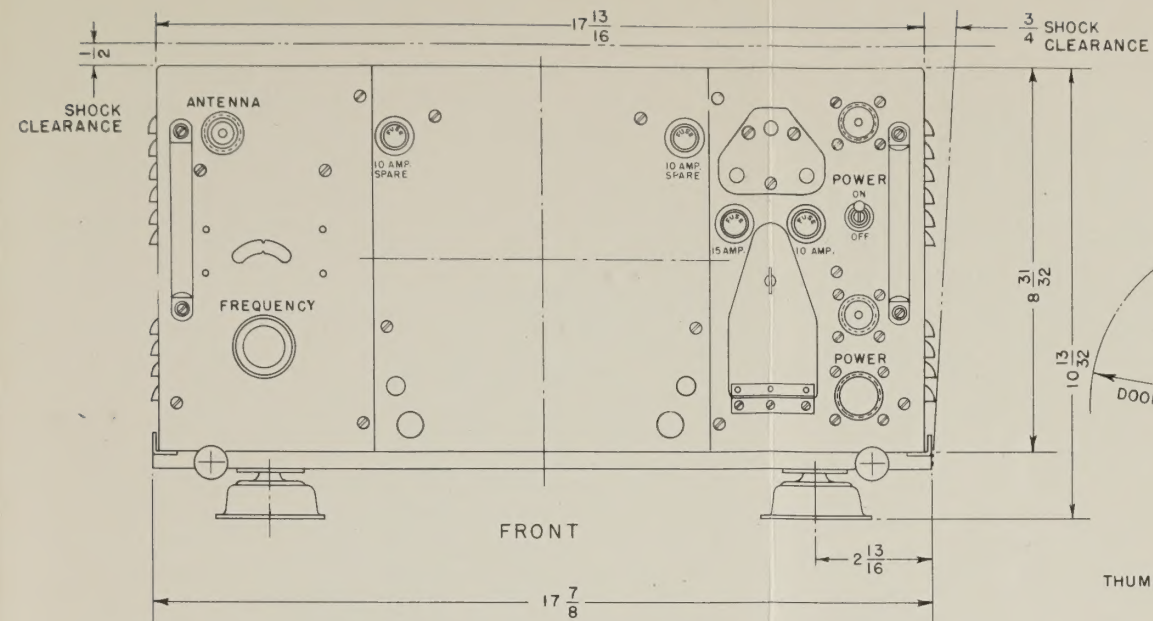
TO REMOVE UNIT FROM SHOCK MOUNTING, RELEASE THUMB SCREWS ON FRONT OF UNIT AND REMOVE IN ONE OF THE FOLLOWING WAYS:

1. SLIDE STRAIGHT FORWARD.
2. SLIDE FORWARD ONE INCH, THEN LIFT VERTICALLY.
3. SLIDE FORWARD ONE INCH, THEN LIFT VERTICALLY $\frac{3}{4}$ INCH AND REMOVE Laterally.

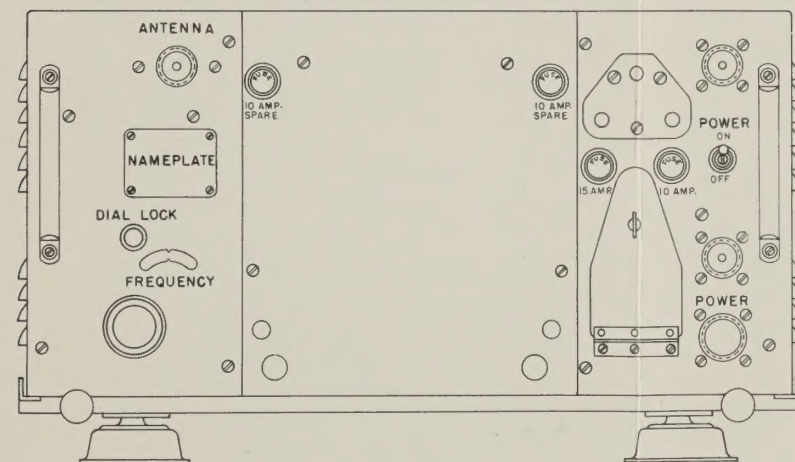
APPROX. WEIGHT - POUNDS		
RECEIVER ASSEMBLY	SHOCK MTG. ASSEMBLY	TOTAL
$52 \frac{1}{4}$ INCLUDES LIGHT SHIELD	$2 \frac{3}{4}$	55

RCA DWG. T-256163

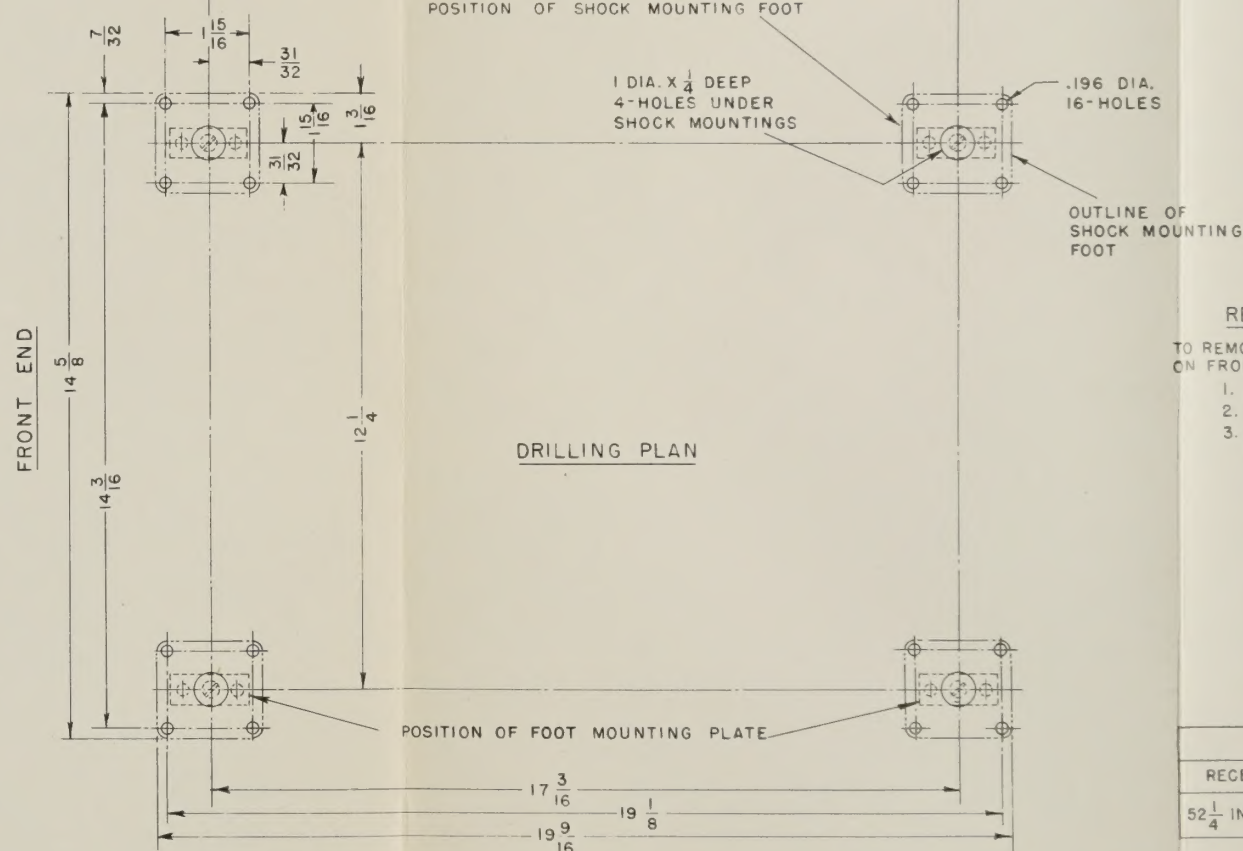
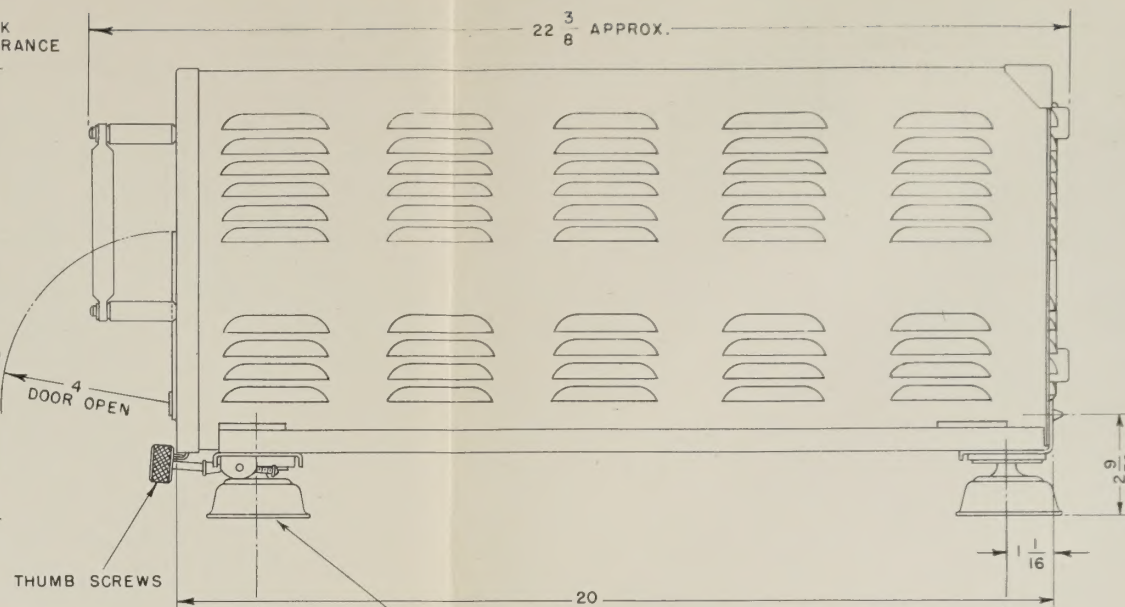
**Figure 11—Radio Receivers CRV-46ACC and CRV-46ACD,
Installation Diagram**



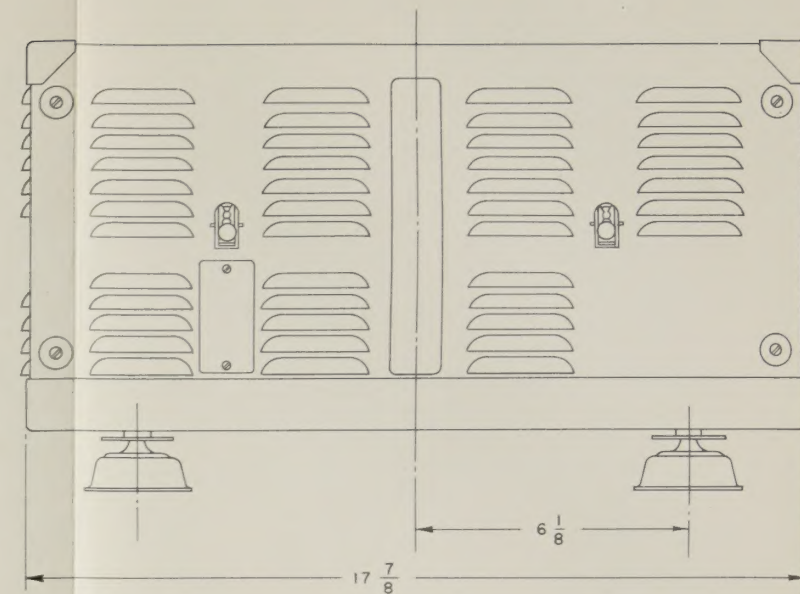
1 NAVY - CRV-46ACC



2 NAVY - CRV-46ACD



RESTRICTED



REMOVAL OF UNIT FROM SHOCK MOUNTING

TO REMOVE UNIT FROM SHOCK MOUNTING, RELEASE THUMB SCREWS ON FRONT OF UNIT AND REMOVE IN ONE OF THE FOLLOWING WAYS:

1. SLIDE STRAIGHT FORWARD.
2. SLIDE FORWARD ONE INCH, THEN LIFT VERTICALLY.
3. SLIDE FORWARD ONE INCH, THEN LIFT VERTICALLY 3/4 INCH AND REMOVE Laterally.

APPROX. WEIGHT - POUNDS		
RECEIVER ASSEMBLY	SHOCK MTG. ASSEMBLY	TOTAL
52 1/4 INCLUDES LIGHT SHIELD	2 3/4	55

RCA DWG. T-256163

Figure 11—Radio Receivers CRV-46ACC and CRV-46ACD, Installation Diagram

